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THE

JOURNAL OF HORTICULTURE,

COTTAGE GARDENER,

COUNTRY GENTLEMAN,

BEE-KEEPER, AND POULTRY CHRONICLE.

A JOURNAL OF GARDENING, RURAL AND DOMESTIC ECONOMY, BOTANY, AND NATURAL HISTORY.

CONDUCTED BY

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AGRICULTURAL COLLEGE

TO OUR READERS.

What we should have said to you for this—the forty-fifth—time must ever remain among the things unknown, if the International Exhibition had not brought to London, and so inevitably to our office, that spade's-a-spade-calling woman, Miss Penelope Pomeroy. There's her chair, just as she has left it, appropriately all a-twist, and the hum of this really Cornish Bee is still upon our ears. She *is* a bee, because though she stings with a will, she also affords honey—she subscribes regularly, pays promptly, praises us when absent, and sends us Pine Apples. "So you have turned reformers, I see. If people choose to pay a guinea a-pound for Strawberries, why not let 'em? You will not be the better for having them supplied for half that money. Remember, Lord Melbourne was a reformer, and his reforming taught him a lesson. Whenever a change was proposed he always said, 'Can't we leave that alone?' So I say, Can't you leave the Covent Garden monopolists alone?"

With becoming dignity, and in a tone and words well expressing, we replied that we felt it our editorial duty to be guardians of the public interests.

"Guardians of public fiddlesticks! Pooh! If you are bent upon needful reforms, reform your own pages. You begin to need new type; you ought to report more country shows—I mean horticultural, not cock-a-doodle shows, we have enough of them."

We looked at each other—that is, we two Editors did, and the least young, with apparent humility, and certainly with great command of temper, said that both those reforms were contemplated, adding, with his usual ingenuity, "We shall not inquire, like Lord Melbourne, Can't we leave that alone?"

"That's right," said Miss Penelope, rising, "and if I were a man I'd give each of you a Cornish hug," which, as she is fifty and not well-favoured, we looked as if contented to have been spared.

We thought she was gone when the least old of us had closed the door, but it re-opened, and the comment reached us—"You've some rational new contributors. I am well pleased with them." No response could be given, and was not wished for, for the door was reclosed promptly and sharply. We looked at each other as men look when they feel inclined to be indignant, and yet think it best to seem indifferent. "Never mind," said the least young, "we will tell our readers."

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WEEKLY CALENDAR.

Day of Month	Day of Week.	JANUARY 5—11, 1871.	Average Temperature near London. Day.	Night.	Mean.	Rain in 43 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
						Days.	m. h.	m. h.	m. h.	m. h.	Days.	m. s.	
5	Th		41.4	27.3	34.4	16	8 af 8	4 af 4	0 af 3	48 af 6	14	5 35	5
6	F	Epiphany.	41.1	28.6	34.8	14	7 8	6 4	48 3	44 7	O	6 2	6
7	S		41.7	29.1	35.4	17	7 8	7 4	46 4	33 8	16	6 28	7
8	Sun	1 Sunday after Epiphany.	41.0	30.1	35.5	14	6 8	8 4	52 5	14 9	17	6 53	8
9	M		41.2	30.8	36.0	15	6 8	9 4	2 7	48 9	18	7 18	9
10	Tu		42.0	30.3	36.1	18	5 8	10 4	17 8	16 10	19	7 43	10
11	W		41.5	30.1	35.8	22	5 8	12 4	32 9	40 10	20	8 7	11

From observations taken near London during forty-three years, the average day temperature of the week is 41.4°, and its night temperature 29.5°. The greatest heat was 54°, on the 7th, 1845, and 9th, 1852; and the lowest cold 6°, on the 7th and 8th, 1861. The greatest fall of rain was 1.00 inch.

NEW YEAR'S HOPES.

A. H. KENT—whether Mr., or Mrs. or Miss I know not—you are responsible for my sitting down to write another New Year's paper, your kind words in the last number but one beckoned me to my chair, hade me get out the accustomed paper, and dip my pen into the ink, your genial expressions having warmed my heart; I therefore summon up memory, and write yet again, as there may be other A. H. Kents who dislike not a ketching pen, and who care, now and then at least, for omething in addition to business details. I have put for itle the words "New Year's Hopes;" and never were men nore in need of hope than now. "Hope springs eternal in he human breast," and well that it does. A poet of our entury picturing a time (so like the present),

> "When murder bares her arm, and rampant war
> Yokes the red dragons of her fiery car:"

Vhen all seem to forsake, when peace and mercy are anished, he adds—

> "Yet Hope the charmer lingers still behind."

o at the beginning of this year, in spite of the sad past, et us indulge in Hope—hope for more peaceful days, hope nat the New Year may not see, as the old one did, the abours of the husbandman, the Vine-dresser, and horti- ilturist trodden beneath the spoiling foot of the soldier.

The greater number of our readers and writers delight i a garden; a great, perhaps the greater proportion, are rofessionally engaged in horticulture. Amid their dis- ouragements, and all callings have many, yet gardeners ave many things which, borne in grateful recollection, e suited to comfort them, and make them content. hey are for the most part removed from the corrupting fluences of large towns; the wages are more likely to be isbanded carefully, books to be studied, and the minds of oung men better trained and disciplined, and the winter's enings better employed. Are they young married men ith families? A cottage in a garden, with garden and ral surroundings, is an innocent atmosphere in which to ing up children—healthier and purer for mind and soul. is a blessed thing to be able to rear our young ones vay from vicious scenes, and with the teachings of Nature fore their eyes. I have known where a country-spent yhood has been a great means of preserving a pure man- od. Well said Lord Derby at the last dinner of the rdeners' Royal Benevolent Institution—"A man might lk through a picture gallery, and see a great picture or ıtue, and yet it would only create within him a feeling admiration. But take the dullest lout out of the streets, the most savage Arab that ever slept under a dry arch, t him amongst flowers and trees, these will do him good, they are things which appeal to something in man that akens within him a consciousness of his duty to his eator."

Further, working gardeners with large families will soon ve a chance for their children which they had not so readily before—I mean the advantages of a State-watched-over and therefore an efficient education. This will in future years give boys a great advantage—grant to all boys the opportunity of an equally good education; subtract from their number the idle, the dull, and perhaps the sickly: then the remainder will have a capital opportunity of "going to the front," and doing well in the world. In Scotland, a country up to the present time far before us as regards elementary (not higher) education, this has often been seen. The father of Robert Burns was a gardener; he sent his son to school at six years of age, it was all his good father could do for him, but what a result! Had the parents of Burns, for I must include the mother's influence as well, been content to let their boy wander about without learning of any kind, one great name would have been blotted out of the roll of British literature. Therefore many parents with large families may take comfort, for if they send and keep their children to school they may have sons, aye and daughters too, known in the future; for "to the front" will go in years to come the educated, the clever, and the industrious.

But with the thought of the increased brain-work in England comes also the thought of the increased need of wholesome recreation. England is further and further receding from the "merrie England" of olden time, which meant to a great degree holiday-making—May-pole dancing, Christmas and Twelfth-night romping, and keeping all the many holidays of the old calendar. Now it is working England, and he who provides a wholesome recreation for his fellows in this brain-exhausting age is a public benefactor. But nothing gives such a change and benefit to men, to those, especially "in populous cities pent," as a glimpse of Nature. A recent writer in the *Saturday Review* says well—"In the way of recreation one view of Hampstead Heath is worth whole volumes of tropical travel; and a linnet in a Surrey hedge gives a fresher idea of Nature's charms than all the stuffed specimens in the zoological department of the British Museum." But no object to pursue daily and constantly equals horticulture for providing wholesome recreation, and, let me add, for promoting good temper. Wonderfully fascinating is it. Deny a garden; yet he who loves one will not be beaten. Thus we all remember "Picciola, or the Prison Flower," and he who watched it with intense delight as it unfolded itself from its first pair of leaves to its full flowering. Then there is Dickens's story of the boy, crippled and bed-ridden, who was devoted to his plant in the broken jug in the window; yes, and what comfort it gave him.

It is wholly wrong to ridicule one who has found some hobby, though we may not care for it. I have read of a very hardworking clergyman whose delight was to see and measure large trees. Every spare hour he could get away he was looking for a large tree; he had trees on the brain. He dreamed of trees of vast girth and height. His yearly holiday was devoted to searching for large trees. In a happy time of longer leisure he crossed the Atlantic, sailed up the mighty Amazon, and sought and found vaster trees than before. He collected pictures of trees, books on trees, facts about trees, and I should fancy drew from trees, as

well he might, many an illustration in his sermons. Was that a man to be laughed at? Certainly not. He had found a delightful, health-giving hobby; how much better was he situated than the multitudes of travellers who, aimless and yawning, pass through Europe with Murray in their hand. Oh! blessings upon every hobby that takes a man face to face with Nature. I like to hear an artisan grow eloquent over the beauties of his pets, be they fowls, or pigeons, or canaries. I like to see the entomologist start off with his net for the country.

"See to the shady grove he wings his way,
And feels in hope the rapture of the day;
Eager he looks: and soon to glad his eyes,
From the sweet bow'rs by Nature formed, arise
Bright troops of virgin moths and butterflies."

But to have full enjoyment you must take care and pains; as one of our writers well said in regard to poultry as a hobby, "to be fond of poultry is not merely to keep cocks and hens, but to multiply surface, to overcome difficulties, to supply that which is wanting, to concentrate (this is the point) on a cock and five hens the interest enjoyed by those who have thousands of acres and hundreds of fowls." Perhaps viewed in this light is the special value of florists' flowers—flowers which I humbly think are now too much neglected; but what happiness do they give! The man with an atom of backyard yet has a fund of enjoyment in it because of his Auricula stand, or his two dozen or so pots of Carnations or Picotees. One of my boyhood's friends was a tailor, a careful, comfortably-off man, who sought not his happiness at the public house, but in his little town garden, where he found room for prize Carnations and Gooseberries, fancy pigeons and bees.

Then there is the time which will come, or has come to us, the time—

"When life's day draws near the gloamin."

When as Crabbe's middle-aged hero said—

"I rode or walked as I had done before,
But now the bounding spirit was no more.
I showed my stranger guest those hills sublime,
But said, 'The view is poor, we need not climb.'
For home I felt a more decided taste,
And must have all things in my order placed;
In fact, I felt a langnor stealing on:
The active arm, the agile hand were gone.
I loved my trees in order to dispose;
I numbered Peaches, looked how Stocks arose."

And had Crabbe lived in these days, he might, perhaps, have added something of this sort—

"For quiet pleasures I began to seek,
Kept fancy pigeons, learned to play bézique."

A garden and home-bound pleasures have, we know, special charms for the retired and middle-aged man, and a happy thing it is when he takes to them.

One caution or two as to hobbies. Always bear in mind that people have various tastes, and do not cram your own special hobby down everybody else's throat. Then do not follow your hobby in order to stifle serious thoughts, nor love your pets better than your fellow Christians. All must be loved in order: the Creator first, then our fellow men, then the lesser, because soul-less, works of His creation. We should also cultivate a useful mode of applying observation. Bearing upon this, Addison in "The Spectator" (Does any body read it now in these sensation-novel days?) says, "My friend Sir Roger is very often merry with me upon my passing so much of my time among his poultry." The Spectator was spending a month with the worthy knight at his country seat in Worcestershire, who complained, "that his ducks and geese had more of his guest's company than himself." Addison replied, "I am infinitely delighted with those speculations of Nature which are to be made in a country life, and as my reading has lain very much among books of natural history, I cannot fail to recollect upon these occasions the several remarks which I have met with in authors, and to compare them with what falls under my observation." Now, this Journal does much in leading minds to the gardens, and to nature generally, and to the poultry yard especially, and so contributes, I believe, not a little to wholesome recreation. Among all longings none are so strong as the town man's longings for the country. "I long," said a Londoner to me, "to lie on a summer day on my back on the grass and look up into a tree." Even where the whole day is not spent in a town, yet if the day's occupation be in-doors the same feeling for bringing nature, or a reminder of nature near, is not unfrequently seen. The shoemaker and the tailor, and others of like in-door occupation are, and always have been, among the most ardent bird-fanciers; the goldfinch in his cage bringing the Furze common and the healthy glow there found, before the man's eyes and feelings, shut up though he be in a hot workshop.

I had an instance to the point brought before me this last spring. I was spending the day in one of the most lovely spots in this county, amidst scenery bordering upon the bold and romantic. I had walked through the wild wood that covered a hill top, from either side of which was a noble view. Then descending, I wandered along the margin of a most meandering trout stream that glittered in a more than spring sunshine. It was one of those rare and superb spring days, occurring rarely, when the weather is summer anticipated.

"The young lambs were bleating in the meadows,
The young birds were chirping in their nests;
The young fawns were playing with the shadows;
The young flowers were blowing toward the west."

Still I wandered on in the bright sunlight by the glittering stream, when I came upon an old, very old, paper mill, with its heaps upon heaps of rag bundles outside, the whole one blotch on fair nature, a proof how man's nastiness can mar God's beautiful earth. I almost cursed the thing for being there by the bright stream and the wild, yet, being the west of England, well-clothed landscape. Loathing I entered the old mill, and was soon among the dirt-coloured machinery, inside the dust-coloured mouldy walls, coarse shed-like walls, where all day long the wheels were droning and turning. Pinch-faced men in paper caps, old weasel-like withered men, were moving slowly here and there. Young men were there too, and women, and girls. Coarse paper in all stages of manufacture, from pulp to parcels ready for sale, was around me. All, wheels, budding, living creatures, all, exactly like a scene in the heart of a manufacturing town, and I could not believe that outside, just outside the cobweb-covered windows was a lovely scene in all its spring beauty. I sickened at the sight, when turning I saw on a rude partition of unpainted and worm-eaten boards a picture, a good engraving, of a Rose, with some pretty lines beneath it. How dearly must the one who placed that picture there have loved flowers; gathered flowers would soon have died in such an atmosphere. It was only a picture flower that would last. The picture cheered my eyes, and seemed to say there was something better in the world than rags, and pulp, and coarse mercantile paper; and though the wheels kept on droning and turning, and dinning my ears with their metallic noise, yet the Rose, and thoughts connected with it, in a measure atoned for all. We are told that Dickens had always before his eyes in his study at Gadshill vases of flowers, and that he never worked happily unless in their presence. Flowers may be regarded so variously. They call up reading and memory in regard to them, as one says—"It is always pleasant, walking in a garden, to remember the native home of the flowers, and imagine them surrounded by their own scenery. It gives them a new interest and a fresh beauty. We see them growing; the dewy Auriculas among the moss and snow of the Lower Alps; the Guernsey Lily in the Japanese meadow; the Ranunculus in the fields of Cyprus; the rich-dyed Pelargonium in the rank kloof of the Caffre frontier; the flaunting Dahlia in the plains of sunny Mexico; the burnished Eschscholtzia in the sands of golden California; the gay yellow bladders of the Calceolaria in the forests of Chili. Think of them with these surroundings, and you will see how the flowers fit their own special countries. A Caffre beauty would twist a thick cluster of dark crimson Pelargonium in her black oily hair. The dashing Mexican horseman, all leather and lace, would stick a huge white Dahlia in the band of his enormous sombrero. A Japanese lady would pace over the bamboo-bridge with a Guernsey Lily carried like a sceptre in her hand. Just so it is with vegetables; they, too, have their history, their legends, and their poetry. It is not uninteresting to recall whence they came, and how they reached in slow procession their great parliament house in Covent Garden. Crusaders, merchants, pilgrims, and monks brought them to us from eastern hill and southern plain, from northern meadow and from western forests."

But now let me turn to "our Journal," a great promoter, I know, of happiness in many homes, where its advent is looked for with pleasure, as said to me one constant reader of every one of its pages—"I look for it as I used to look for a love-letter from the post." I have met it this year in cottage, villa, and even in the precincts of a royal palace. Shows, I hope, will contain in future a more varied collection of birds, as did the Portsmouth Show, of which the report opened thus—"Combined with poultry and Pigeons the Committee offered for the

first time liberal prizes for cage birds and rabbits, and *thus* (mark the 'thus') secured the attendance of a very large body of visitors." The war in France has brought two things before us which it would be well to remember. First, we in England, depending so much upon France for eggs, may soon be suffering by still greater dearness of eggs. We ought to be able to supply eggs for our home consumption. Every cottager living by a roadside could cheaply keep fowls; landlords should be less jealous of their doing so, and neighbours less tiffy. Small farmers could add largely to their income by keeping more fowls; but for idleness and ignorance poultry would be kept in thousands where now only tens and hundreds are seen. Then the French war has taught all readers of newspapers the value of Carrier pigeons. If I ventured in general company to speak of the wonderful homing properties of the Antwerp I was smiled at, and heard the words "electric telegraph." Now it is all different. As in the siege of Constantinople A.D. 139, so in the siege of Paris A.D. 1870, the Carrier is the only safe telegraph. The electric wires in war are at once destroyed; if laid underground, as near Paris, they are found and dug up, or, worse for the besieged, "tapped," and their secrets known and revealed. Had the Parisians and French generally been as keen pigeon-fanciers as their neighbours in Belgium and Holland, there would not have been, as now, a scarcity in Paris of good and safe birds. Safe, for what hawk could catch a well-fed, well-trained Antwerp? I look, then, for poultry to be kept more generally, and homing Pigeons to be much more widely known. By the way, I would remark upon the great improvement in appearance of Antwerps as exhibition birds at the Crystal Palace Show. The three winning pens "of six working Antwerps in each," were beautiful in feather and matched well. If beauty and usefulness be combined I am sure they will be kept very generally.

I notice sometimes that odd questions are sent to our Editors. Now, to anticipate one and save them trouble. If any Pigeon-fancier is plagued with cats who make sad depredations on his birds, I will by all means recommend him for a sure and certain cure to get a dog of the following kind, that is——if he can. Mr. Pepys, in his Diary, saith, September 11th, 1661. "To Dr. Williams, who did carry me into his garden where he hath abundance of Grapes: and he did show me how a dog that he hath do kill all the cats that come thither to kill his pigeons and do afterwards bury them, and do it with so much care that they shall be quite covered; that if the tip of the tail hangs out, he will take up the cat again and dig the hole deeper, which is very strange; and he tells me that he do believe he hath killed above a hundred cats." That is the breed of dog for us Pigeon-fanciers to keep.

But 'tis time I should conclude. To some this is the only weekly periodical where there is a large family and careful parents, and "our Journal" forms, therefore, the chief evening reading. I know that a kindly article lights up into cheeriness many a quiet group, in a neat cottage, in a garden. A worthy Gloucestershire gardener, who being a Welshman, and whose name not being Jones—he bore of course one of the other two Welsh names—told me, warmly grasping my hand, he read all aloud to his wife. A good wife that, taking thorough interest in her husband's calling, as wives should.

My New Year's hopes are that this may be a happy new year. I hope the present war will cease and no other begin, and that the peaceful Eden-like labours of the garden will prosper. I hope there will be peace and plenty. I hope men will grow wiser, better, kinder, more loving, more brotherly and brother-like. Cultivate kindness—kind words, looks, and a kind present do wonders; it need be but a little one and of trifling value, but it warms the heart. One more word, and that a serious one. I have spoken of flowers being gathered from far-distant and different lands into our gardens; but there is another process of selection going on—the gathering of men into a better garden. May all who read these words be among those so selected, so gathered.—Wiltshire Rector, *Hilltop Rectory, Wilts, New Year's-eve*, 1870.

POTATO PLANTING.

On looking over the papers Mr. Lewis has written on this subject, I see he has not mentioned the way in which the Potato is planted in some parts (in Devonshire, for instance), as I suppose he wrote principally for amateurs and cottagers. I venture to add this plan, thinking it far supersedes those he noticed, although very similar to the one he mentioned for field planting. Should he not have said, The horses ought not to be worked abreast, or they will trample the Potatoes that are in the furrow, but that they should be worked one before the other? What an immense saving there is in this way to that of drilling out the ground first, and then carting the manure between the drills afterwards. One plough puts in one acre per day, and one man and a lad put in their quarter of an acre per day, and leave off at five o'clock. As, I believe this is not generally attended to, I will detail the simple way in which they do it.

Each allotment is half an acre, and we will suppose that the quarter of an acre of ground has been turned-up during the winter. The cottagers on the estates of the Earl of Devon, and I hope on all other estates, are allowed to keep their pig—the very life of an allotment—so that with a few bundles of ferns, long grass from hedges and ditches, and the straw from the quarter of an acre of Barley, which each cottager is bound to grow every year as per agreement, he thereby, with all his gleanings, manages to prepare from four to six good loads of manure. The ground is planted alternately with Barley and Potatoes. The manure is thrown in heaps in the middle of his Potato ground a day or two before planting; he has been busy for a night or two preparing the seed by cutting and making each sort ready for the eventful day; and whether he puts them in himself or hires, the work is begun early the next morning. There is one thing he will surely not forget—the few coppers, or maybe a bit of silver, he has hoarded up in some snug corner "vor a drap o' cider vor tatty planting." The dung is spread evenly over the ground first, the Potatoes are placed in convenient lots, and now the work begins in earnest.

The line is stretched across at the lower end of the ground; the man with his mattock digs out the furrow, the lad with his basket of seed Potatoes drops them about 10 inches apart; the line is then shifted 22 inches off. The lad, with a good-sized iron-toothed rake, next rakes in the dung on the Potatoes, the man follows him, making another furrow to cover it, and the end being gained, he wheels round and makes another furrow for the next row; the boy following, drops the seed as before. The row finished, and the line shifted, the boy rakes in the dung, the man following covers it with the next furrow, and so on to the end.

Thus it will be seen the man is always in his work, not having to walk a foot without tending to diminish his day's work, and this, too, without leaving a footmark behind him, and the soil is laid on the Potatoes in the lightest possible manner. The Potatoes all in, the paths are shovelled up, and all is left until the Potatoes are beginning to make their appearance, when a rough rake is run over the whole to knock down clods and to kill all seedling weeds. All hoeing and earthing-up is done during the mornings and evenings by the cottager and his family, the allotment being within a few minutes' walk of the village.

It often happens that the cottager is short of garden room at home, and then he will drop a few Broad Beans in every three or four rows at planting-time, or scatter a pinch of Turnip seed after they are earthed-up, which seems not to interfere with the Potatoes. It is a pleasing sight to walk through these allotments on a fine evening, and see the many little happy groups at work with an earnestness that ought to shame the man spending his last farthing in the tap-room, or the landowner who says, "I could not think of taking away a field from my farmers to lay out in allotments." The noble landlord and his late worthily-esteemed lady, whom I have named, have given prizes every year for the cleanest and best-kept allotment, and for the best piece of Barley, Potatoes, and Mangold Wurtzel, &c. The competition is very spirited, and produces the best results.—J. Taylor, *Maesgwynne, South Wales.*

DWARF POINSETTIA PULCHERRIMA.

Mr. Fish in his "Doings of the Last Week," December 22nd, says—"The Poinsettia can never look compact so as to have a fine head of crimson floral leaves." As I read those lines I had a plant on the table before me, which I measured; it stood 5½ inches high from the pot, a 4-inch one, and the floral bract measured exactly 8 inches across. I then measured another in the conservatory, in a 6-inch pot, which had two floral bracts, one was 4 inches high and 7 inches across, the other 5 inches high and about 8½ inches across. These were taken off the old plants and struck after July 1st, though I do not exactly remember the date, and were merely joints with eyes, as I cut the long shoots I took off the old plants into

three or four cuttings according to the size, and I find the joints of the older wood make better plants than the points. They have been growing without any check in a very light house with plenty of moisture, and all that struck have flowered, and all, except one that pushed two eyes, are in 4-inch pots.

I intend to try experiments next summer by taking cuttings at different intervals, and pinching-back the earlier-struck ones, as I think if they are not overpotted, but kept growing in plenty of light, and with moisture enough so as not to let them lose any leaves, they may be kept very dwarf. The old plants (two in number), from which I took the cuttings, both pushed fresh blooming shoots, but were too tall and straggling to be ornamental. I do not pretend that the floral bracts of young plants treated in this way, are so fine as those on strong unchecked shoots on old plants, but they are more ornamental, and occupy but little space.—C. P. Peach.

SELECTIONS OF GRAPES.—No. 1.

Probably there is nothing so perplexing to the amateur and practical horticulturist as choosing from the numerous kinds of fruit trees named in catalogues those best suited to his requirements. All the varieties enumerated may be really first-rate for some particular want of the horticulturist, each may supply some need, or answer a particular purpose, but though it may suit one person, it may not suit another, because the means are different. One may have an unheated house, and the other's house may not only be heated, but have the border inside, and not unfrequently it is furnished with chambers for hot-water pipes, so that the soil can have artificial warmth as well as the atmosphere. So varied, indeed, are the means or conditions of culture, that instead of looking at the long lists of varieties in bewilderment, I have learned to esteem them. Our nurserymen are not slow in bringing into notice any new and good varieties of fruits; they cling to old and justly valued kinds of proved excellence; at the same time they are not long in expunging from their lists what the popular voice says is superseded by other and better kinds, as regards quality, size, and productiveness. Judging from your correspondents' column, some of your readers experience a difficulty when they have erected a vinery in regard to what kinds they should plant, in order that, with the means they have provided and can afford, it shall give them in due season Grapes in perfection. On the varied conditions under which Grapes are grown in this country, I purpose at this time to make a few remarks, and my doing so will, I hope, elicit from others their experience.

Out-door Grapes.—History informs us that Vines were planted on more than one southern slope of this country, and Grapes grown which if not such as might be taken from the Vine and eaten, were good for making wine. Though I am no believer in the value of wine of whatever brand as a beverage, or for any purpose, though it may be of value medicinally, yet there are many at the present time who would, were it practicable, grow, as did our ancestors, Grapes for making wine. "Upwards and Onwards" has proved that some little distance north-west of London—namely, at Woodstock, in Oxfordshire, with the aid of walls, Grapes can be grown of a quality suitable for making wine little if at all inferior to many foreign vintages. There can, therefore, be no doubt as to the possibility of growing out of doors in this country, by the aid of a wall or other means, Grapes suitable for wine-making; but it remains, as far as I know, to be proved whether they can be grown in any part of the kingdom without some artificial aid beyond culture on southern slopes. I am in hopes that such may prove the fact; but so far as I have experience it must be in some warm spots in the far south, and there only.

So far north as here (Yorkshire) Grapes from Vines against walls with south aspects, are when at their ripest so sharp in flavour that few can partake of them, but I have seen Grapes ripened against walls both in the north and west that could not be devoid of sugar, or the wasps would not have devoured them so greedily, and I have no doubt they would have made very good wine. Indeed, for eating they did not compare unfavourably with imported Grapes. From want of thinning, however, they were small in berry, and the shoots not being stopped sufficiently, nor due regard paid to the laterals so as to concentrate as much as possible the energies of the Vines on the bunches of fruit, these did not ripen so well as they otherwise might have done. Another disadvantage of Vines out of doors is their often being planted in soil wholly unsuitable—heavy or wet—so that they are late in starting into growth, and do not ripen the long sappy shoots which are produced in great profusion. Under favourable conditions of soil, a light and dry one, and against sunny warm walls, especially the walls of houses with projecting roofs, they may be grown to a considerable degree of perfection. I have known them grown successfully on the south wall of a cottage at Weston, in Shropshire, and also as far north as Acomb, York. The finest Grapes I have seen grown out of doors were at Oxton Hall, Tadcaster, by the aid of a flued wall, about twenty years ago; and at Parlington, Bryam Hall, and other places, good examples of out-door Grape-growing might at one time have been seen; but of late years glass has been so cheap that this mode of Grape culture has been neglected.

A selection of Grapes for out-door culture is as follows:—Royal Muscadine, round berries, and rather large; this kind, as far as I have experience, is the best of all, ripening with the greatest certainty and perfection. Early White Malvasia; the berries are much smaller than the Royal Muscadine, and the Vine a great bearer. Early Malingre, round or slightly oval berries, small; it is a great bearer. White Romain, berries oval, small; great bearer. Grove End Sweetwater, berries round, medium-sized; good bearer. These are all white or amber-coloured when ripe. Of black or purple sorts, Black Cluster, berries roundish oblong, and small, and so the bunches also are. It is, however, the best of all for out of doors. Cambridge Botanic Garden, berries oval, rather large; bunches short; a great bearer. These two are the best black Grapes for walls. Ingram's Prolific Muscat, berries oval, small. Espiran (Esperione), berries large, roundish; abundant bearer, and hardy, but not so hardy as the two first-named black kinds. These are all the kinds I advise for growing by the aid of walls, and those who can afford to cover the wall with glass would be acting wisely and well to do so, the kinds named being well-suited for a glass-covered wall in a cold climate, where by such an aid they may succeed as well as or better than they do against an open wall in a more favourable climate.

Vines in Unheated Houses.—The houses may be of three kinds—viz., 1, Ground vineries; 2, Orchard houses; 3, Lean-to houses, or a wall with a south aspect covered with glass.

1. *Ground Vineries.*—Of these I have not sufficient experience to warrant my giving a selection. I have no doubt of succeeding with them, but I have grave doubts of some kinds flourishing as they do in a house with a larger amount of enclosed air. Perhaps some of your correspondents will favour us with their experience, naming the kinds most suitable for ground vineries.

2. *Orchard Houses.*—I am equally at fault with this kind of house as with ground vineries. By an orchard house I mean a house constructed of wood and glass, and detached from walls or other buildings. Of it, as regards Grape culture, I have no experience. By reporting progress those who have experience in this mode of culture would confer a benefit on myself and others.

3. *Lean-to Houses against Walls or Buildings with a South or South-west Aspect.*—Narrow houses sufficient only for a path answer well, but there is no disputing the fact that large houses are the best; 18 to 20 feet I consider quite wide enough. I have seen and grown very good Grapes in houses but 12 feet wide. The chief considerations to be taken into account for the successful ripening of Grapes in cold houses are—1. To have the border considerably above the surrounding level, one half its depth above it under any circumstances, and entirely when the situation is low, and water inclined to lodge. 2. To concrete the bottom of the border, both inside and outside, with the needful incline for water to run to a point whence it can be carried off by a drain. 3. To have as much of the border inside as possible, though part outside is not bad, but, on the contrary, I believe beneficial. 4. To drain the border well. 5. To make the border of fresh and not very rich compost, open, and not likely to settle into a close soapy mass. 6. To have front and top ventilation to effect by air-giving a thorough change of air, as well as to prevent damp. 7. To husband the sun's heat by early air-giving, and shutting-up whilst the sun has considerable power, always leaving on a little air to prevent the scorching of the leaves. 8. To employ no more wood in the construction of the house than is absolutely needed for stability, having the squares of glass of good size, and not being too sparing as regards its weight; 21-oz. glass is the lowest weight that ought to be used; 26-oz. and even 32-oz. will not be too heavy. Avoid the best quality of glass; 3rds will be quite good enough. Lastly. If a span-roofed house be employed have it wide, not less than 20 feet, and have the sides wood and glass, the light coming to within a

foot of the border. Narrow span-roofed houses I have found neither so warm nor even-temperatured as those which are larger.

A selection of Grapes for houses such as those above referred to may consist of the following:—Black Champion, berries roundish oval, good bunches; earlier than the Black Hamburgh. Trentham Black, berries oval, large; good bearer. Black Hamburgh, berries oval, bunches and berries large. Frankenthal (Pope's or Victoria Hamburgh), berries roundish oval, large; undoubtedly the most useful Grape in cultivation. The above are all Black Grapes of first-class excellence. Of the white or amber-coloured kinds I would recommend Buckland Sweetwater, berries round, large; a great bearer. Foster's White Seedling, berries roundish oval, of good size; this must supersede the Royal Muscadine. Chasselas Vibert, berries round, large. General della Marmora, berries round, large; a good bearer. Sarbelle Frontignan, berries round, small, but a good early free-bearing kind with the full Frontignan flavour. The foregoing are all first-class Grapes, having large berries and bunches, except the last, which is given to meet the taste of those requiring the Muscat flavour. White Frontignan I have found ripen fairly in a cold house, but to do so fully it requires a good heat, and then it is a first-rate Grape.—G. Abbey.

THE GLADIOLI OF THE PAST SEASON.

Of these there were thirty-two, divided into various sections according to their price. The first class comprised Armide, La Candeur, Orphée, Pericles, Robert Fortune, and Rosa Bonheur; the second Agathe, Delicatissima, Elizabeth, Horace, and Sylphide; the third Adanson, Bijou, De Humboldt, Rosea Perfecta, and Sultane; the fourth Lacépède, Livingstone, and Rubis; and the fifth Angèle, Anna, Canova, Cleopatra, Donna Maria, Elegans, Hortense, Irma, Laure, Marthe, Picturata, Regina, and Spectabilis. As these are all seedlings of M. Souchet, it will at once strike anyone acquainted with what raising new varieties is, and the difficulty of obtaining good varieties, that the number is a great deal too many: and so in truth we have found. There are some even in the first class which will not long remain in select collections, while in the fifth class there is probably not one that will be grown. They are all more or less pretty, but do not fulfil the requirements of those who regard quality and excellence of flower and spike as amongst the first requirements. It is ever thus with raisers. Nor are they alone to blame. The craving of the public for novelties is such that they will devour anything; and hence raisers are tempted to select from their seedlings flowers that they would have otherwise consigned to the rubbish heap, or, as in the case of the Gladiolus, thrown into mixtures. The following judgment on them is the result of observations on my own bulbs, supplemented with, in a few instances, notes taken at the Royal Horticultural Society's Special Show, and the Metropolitan Florists' Society's Show at the Crystal Palace.

Armide.—Large and good-shaped flowers; of good habit. The substance of the petals is such that it remains some time in bloom. Colour, white tinged with rose, and flamed and blotched with bright crimson. It seems to be an early-flowering variety like Shakespere; at least my bulbs of it had flowered out before August 15th.

La Candeur.—I cannot understand why this should have been placed in the first series; as a white it is inferior to Madame Desportes, while the petals are pointed and the spike by no means good.

Orphée.—This I regard as about the best variety of the year. It has a long noble-looking spike, a blush white ground strongly flamed with bright carmine, and is altogether a very fine flower. A capital constitution, and prolific in spawning.

Pericles.—This bloomed very late with me. It is another of the light rosy ground flowers, margined and striped with rosy purple, with pure white blotches. My impression of it is that it will not hold its ground.

Robert Fortune.—A very long spike; cerise, largely margined and blotched with dark crimson, violet throat. The petals have a line of pure white in their centre. A very fine flower.

Rosa Bonheur.—Very long spike; the flowers large, white; fine large purple blotches. The top petal has the habit of lapping over backwards, which somewhat detracts from its merits; but I believe, with all that, that it will make a valuable variety.

Agathe.—Large flowers, and a good spike flamed with rose and yellowish blotches, carmine margin. This, too, I believe to be a good variety, although some have dissented from my view of it.

Delicatissima.—I was greatly pleased with this flower. It is of a peculiar shade of colour—white, slightly suffused with lilac, while the lower petals are white. A very distinct sort.

Elizabeth.—Long spike; large flowers, deep rose, strongly flamed with purple; large purple-carmine blotches with white stripes. A fine variety, and at times very brilliant.

Horace.—A good scarlet, with white lines in the centre of each petal; brilliant in colour, and I think likely to be valuable.

Sylphide.—White ground, slightly flamed with carmine. Although the spike is good the petals are pointed, and I do not think it can be regarded as a good exhibition variety.

Adanson.—Large and well-opened flower of a peculiar colour, somewhat in the style of Anais, and very desirable for the contrast of colour. It would do well for the front row of an exhibition stand.

Bijou did not bloom with me (cerise orange), but I heard it but poorly spoken of by those who had bloomed it.

De Humboldt.—Large, bright carmine, flamed and margined with carmine; crimson blotches on white ground.

Rosea Perfecta.—A very pretty variety, rose tinted with violet; all the petals with a white line in them.

Sultane.—Bright rose purple blotches, not first-rate.

Lacépède.—I did not bloom this, but Mr. Kelway (no mean judge) thinks well of it. Rosy violet, and striped with lilac.

Livingstone.—Small, but exceedingly pretty; bright violet cerise with a sort of metallic reflection. Very good for the first row of a bed.

Rubis.—Long spike and large flower, blotched carmine on a white ground. All the petals with a white line.

Of the other flowers I know nothing, but I fancy from the estimate placed on them as to price that I have no great loss. It will thus be seen that I regard Orphée as the premier flower of the season; that I have a good opinion of Robert Fortune, Rosa Bonheur, Armide, Agathe, Delicatissima, Horace, and Rosea Perfecta. My estimate may be wrong, but I question if it will be very far out. Our hopes of getting the new Gladiolusea of 1870 are becoming fainter every day. Oh! what a terrible comment on the message of "peace and goodwill" is that cruel devastating war.—D., *Deal.*

ORCHIDS FOR A CONSERVATORY.

I shall be very much obliged by your stating the names of a few Orchids that could be successfully grown in pots in a conservatory, where the temperature ranges from 46° to 55° day and night. I have now only one Orchid, Dendrobium nobile, which last year flowered beautifully, and I should be very glad to add a few others that a similar treatment would suit.—Sigma.

[The following would succeed in your conservatory:—Cypripadium insigne, Odontoglossum grande, Odontoglossum Alexandræ, Lycaste Skinneri, Lycaste Harrisoniæ, Epidendrum vitellinum, Zygopetalum Mackayi, Oncidium bifolium, Lælia majalis, Lælia albida, Barkeria Skinneri, and Barkeria spectabilis.]

FRUIT TREES FOR THE NORTH.

The result of my continued experience in fruit-growing in these parts may be interesting and of importance to those of your readers who contemplate planting new and improved varieties of fruit trees. It is a very fatal mistake to be guided entirely by "descriptive catalogues" of fruit trees which refer only to the climate of the south of England; but those subscribers who reside in the north of England, or in Scotland, may presume that varieties which succeed in this latitude will also prove successful with them. It is not uncommon to find a gardener occupying his attention and a valuable space on his garden wall in an abortive attempt to grow Chaumontel Pears, or some other variety of fruit equally unsuited to the climate; and it is to guard against such a tantalising proceeding, as well as to encourage the growth of the many new hardy and delicious varieties of fruit that have lately been brought into cultivation, that I venture to record the result of my experience. Some of the finest fruits ripen in great perfection with us. You must excuse me reminding you that for Marie Louise and nine other varieties of dessert Pears, my predecessor in this garden was, at Chiswick, awarded a Banksian medal.

About twenty-five years ago there were upwards of ninety

varieties of Pears in this collection. These have been gradually reduced, by removing those not well adapted to the climate, to nearly one-third of that number, even while including some of the best varieties lately added. By a careful selection of these for each season an abundant dessert may be procured for almost the whole year round. I shall, therefore, for the benefit of amateurs or the uninitiated, give the seasons at which each variety is fit for use in the following list.

For gardens that are not too dry for dwarf or Quince-rooted Pear trees, and for Apples on the Paradise stock, I would recommend these; they occupy half the space, come immediately into bearing, and the fruit will be larger and earlier than on trees of a different description.

LIST OF FRUIT TREES ADAPTED FOR CULTURE AT ELGIN.

PEARS FOR THE WALL.

Doyenné d'Eté, or } July and
Citron des Carmes } August.
Jargonelle. August and September.
Summer Beurré d'Aremberg. Oct.
Sinclair. October.
Beurré Superfin. Begin. of Nov.
Marie Louise. November.
Doyenné du Comice. December.
Hacon's Incomparable. December.
Winter Nelis. January.
Joséphine de Malines. February.
Easter Beurré. March.
Bergamotte Esperen. March.
Beurré de Rance. April.
Fortunée. May and June.

PEARS FOR STANDARDS.

Doyenné d'Eté. August.
Williams's Bon Chrétien. Sept.
Beurré d'Amanlis Panaché. Oct.
Autumn Bergamot. October.
Beurré Superfin. November.
Aston Town. November.
Muirfowl's Egg. November.
Beurré d'Aremberg. Dec. and Jan.
Forelle. January.
Doyenné Defais. January.
Beurré de Rance. March.
Beurré Giffard. September.

PLUMS FOR THE WALL.

Rivers's Early Favourite. July.
Bryanston Gage. August.
Reine Claude de Bavay. Sept.
Coe's Golden Drop. October.
Blue Impératrice. October.
Jefferson. September.

PLUMS FOR STANDARDS.

Belgian Purple.
Dennistou's Superb.
Lawson's Golden Gage.

The following also succeed:—

Van Mons Léon le Clerc.
Thompson's.
Brown Beurré.
Beurré Bosc.
Passe Colmar.

The following dessert Apples have lately come into bearing, on Paradise stocks, and have been much appreciated:—

DESSERT APPLES ON PARADISE STOCKS.

Irish Peach. August.
Kerry Pippin. September.
Margil. October.
Pitmaston Pine Apple. October.
Cox's Orange Pippin. November.
Blenheim Orange. Nov. and Dec.
Sam Young. December.
Ribston Pippin. January.
Melon Apple. January.
Screveton Golden Pippin. Feb.
Duke of Devonshire. March.
Lodgemore Nonpareil. April.
Reinette du Canada. May.
Allen's Everlasting. June.

All sorts of large kitchen Apples bear abundantly.—J. McCulloch, *Gardener, Duffus, near Elgin, N.B.*

P.S.—For the present I withhold any report upon Peaches, Apricots, Nectarines, or Cherries, all of which we grow successfully.

[You will oblige us by sending your other notes. We covet all records of the results of practice.—Eds.]

EARLY-FLOWERING PERSIAN CYCLAMEN SEEDLINGS.

As you have invited your readers to detail their mode of growing the Persian Cyclamen so as to flower early, I have been induced to give my experience relative thereto. Having procured a packet of seed early in the spring of the present year, and having made up in readiness a hotbed of fermenting materials, I sowed the seed on March 8th, and kept the young plants growing in their seed pan until the middle of April, when I had them potted off singly in thumb pots. I plunged them in the same frame as before, and towards the end of May I gave them a shift into 4-inch pots. The compost I used in potting was a mixture of peat soil, a little loam, leaf mould, and cow dung. They were forthwith taken to the stove, placed on a shelf near the glass, and always kept pretty moist, being well watered about once a-week with weak liquid manure made from pigeon dung. They grew remarkably fast—so much so, that from their size I thought I would require to give them a larger shift; however, I did not do this, thinking that they would flower earlier if left in the same pots than they were likely to do had they been shifted. To my delight and astonishment I observed the first flowers showing in the first week of September, and they came generally into flower by the end of October.—Hugh Rose, *The Gardens, Grangemuir.*

I sowed a packet of Cyclamen persicum seed on March 3rd, 1870, and some of the earlier plants bloomed in October. I have now corms about 2 inches in diameter with many flowers fully out, and with from twenty to thirty more buds to come out. Of course these are the most forward and best amongst the seedlings. The seeds were sown in pans in a forcing pit. I pricked out the seedlings as soon as they had two leaves, and constantly repotted them, some being now in 36-pots. As soon as the heat seemed to draw them they were moved into a cooler place, and some have been put back for a week or so into the forcing pit to bring on the flowers. I cannot quite decide whether the corms do best covered with soil or entirely raised above it.

The seedlings had no special soil, excepting a good allowance of silver sand and plenty of drainage. The great point is that they have never been forgotten for a day. Some of my corms showed bloom when very small.—A Lady Amateur.

Although we have not plants like Mr. Clarke's "fit for exhibition," we have a few dozen plants in 5-inch pots, many of them in bloom, and all showing abundance of flower buds, from seed sown at the beginning of last March. The corms are from 1 to 1½ inch in diameter, each supporting erect about thirty finely variegated leaves varying from 2 to 4 inches across.

The seed was sown during the first week of March in small seed pans, well drained, and filled to within an inch of the top with a mixture of loam and leaf mould, with a little silver sand; the soil patted down to keep the seed at the desired depth, and watered through a fine rose; then the seeds were sown as quickly as possible, and finally covered with about an eighth of an inch of silver sand. If sowing is performed quickly the moisture will penetrate through the sand and render another watering (which is very liable to wash the seed bare) unnecessary.

The pans were then placed in the stove with a pane of glass over them, and a piece of white paper laid loosely over the glass for shading. They were frequently examined, and when found dry were gently dipped in the tank, so that sufficient water should flow over the rim to moisten the whole surface.

The glass was gradually raised as the seedlings touched it, and when they had formed two leaves they were carefully pricked off 3 inches apart in boxes drained and filled with the following compost—dried cow dung two parts, leaf mould one part, turfy loam one part, and a little silver sand. The cow dung is collected from a pasture after it has been well baked in the sun. It is a good plan after it has been sifted to water it with boiling water, which kills a great number of vermin liable to be injurious to the plants. The loam is used quite dry, and rubbed through a half-inch sieve.

The boxes were next placed in a low span-roofed house, where Camellias and other plants were making their growth. The young plants were allowed to remain in the boxes for about two months, when they were lifted with balls and lightly potted in 60-sized pots, with the same compost, which I may here mention is used with good results for all our Cyclamens. They were then plunged in bottom heat in the same house, and repotted, as the roots reached the sides of the pots, in 4-inch, and finally in 5-inch pots, always returning them to their quarters in the bottom heat as quickly as possible.—J. Braithwaite, *The Gardens, Verulam.*

PRIZES FOR TENDER PLANTS.

We have a village show, a very healthy baby two years old, and growing fast; we want to offer £10 for six stove plants, open to the world if we can get any competition. Our idea is to have an annual £10 prize—viz., £5, £3, and £2 for first, second, and third prizes for a varying article. This year we say six stove plants; but some suggested it should be for stove and greenhouse, others think that the six should be stove only, not mixed with greenhouse plants—they might come in their turn in future years. How say you?

Is the £10 better divided into three prizes or given all in one? We have three good growers near here, but we must induce strangers to compete. How can we best do so?—C. E. Ellison, *Bracebridge, Lincoln.*

[It is quite certain that you will do wisely to divide the £10 into three prizes as you propose, and we recommend them to be offered for "Six stove and greenhouse plants. N.B.—Either six stove or six greenhouse plants, or a combination, not more than six altogether, of stove and greenhouse plants, may be exhibited in this class."—Eds.]

Intense Cold.—It may be interesting to some to know how we fare at Prestwich with the frost. Commencing with Decem-

her 20th, the thermometer registered 8° of frost; 21st, 10°; 22nd, 20°; 23rd, 24°; 24th, 28°; 25th, 26°; 26th, 18°; 27th, 18°; 28th, 14°; 29th, 12°; 30th, 17°; 31st, 25°. The readings are taken from a registering thermometer every morning at 8 o'clock. It faces the north, and is 4 feet above the ground. The rime is truly splendid, especially on the Pinuses, Araucarias, and Holly. The Rhododendrons and Aucubas look very drooping. —Stephen Castle, *Bent Hill Gardens, Prestwich, Manchester.*

GROUND LEVELLING AND PRACTICAL GARDEN PLOTTING.—No. 10.

DRAWING PLANS.

Fig. 33 consists of eight hexagonal beds, and is drawn and transferred to the ground in the following manner:—Draw parallelogram A B C D and the diameter lines E F and G H. Draw lines 1 2 and 3 4, being half the distance between A H and H E. Where line 1 2 crosses line E F is centre *a*; from centre *a*, with radius *a i*, draw circle *i*. Where line 3 4 crosses line E F is centre *b*; from centre *b* draw a circle with the same radius as *a i*. Find the distance from centre o (the point is where the two diameter lines cut each other) to centres *a* and *b*, mark the same distance on each side of centre o on line G H, as points *c* and *d*, and with the same radius as *a i* draw a circle from centres *c* and *d*. With *c* and *d* as centres find points *f g* and *e h*, which is done in the following manner: — With radius *c a* draw an arc as in *f* on line 1 2; where the arc cuts line 1 2 is centre *f*, as shown: also draw an arc as in *g* on line 3 4; where the arcs cut the line is centre *g*; with radius *d a* find centres *e* and *h* in the same manner, then draw the circles with the same radius as *a i*. Apply the radius six times to the circumference, as chord *r s*, and it will form the hexagon.

To trace it on the ground, the base line A B is 41 feet 4 inches long. Insert stakes in points A and B; from B to C is 62 feet; insert a stake at point C. With A and C as centres find point D, and there insert a stake. Lay lines joining points A B, B C, C D, D A, then lay the diameter lines E F and G H, inserting a stake at each point. Find half the distance between stakes A and H, and insert a peg as at point 1. Find half the distance between stakes H and B, and insert a peg as at point 3; find the corresponding points on line C D, as points 2 and 4. Lay lines joining pegs 1 2 and 3 4; where line 1 2 crosses line E F insert a peg as at centre *a*. With a string 6 feet long trace circle *i*, as shown by radius *a i*; where line 3 4 crosses line E F insert a peg, as at centre *b*. From the peg at centre *b*, with the same length of string as *a i*, trace a circle from peg *b*. From centre *o* measure 10 feet 4 inches on the diameter line towards G, and insert a peg as at centre c. Centres *a* and *c* are equal distances from centre o. From centre *c* trace the circle with the same radius as *a i*, with *c* as centre. With radius *c a* or *c b* trace an arc cutting line 1 2, as shown in *f*, also trace an arc cutting line 3 4, as shown in *g*; where the arcs cut the lines are centres *f* and *g*. Insert a peg at each point, and with the same radius as *a i* trace the circles. Centres *e*, *d*, and *h* are found in the same manner.

To form the hexagon inside the circle, apply radius *a i* six times to the circumference, as shown in *r s*; insert a peg at each point, as at points *r s*. When the six sides are found lay a line from peg to peg and cut out the beds. Proceed in the same manner with the other beds until the design is complete.—M. O'Donnell, *Gardener to E. Leeming, Esq., Spring Grove, Richmond.*

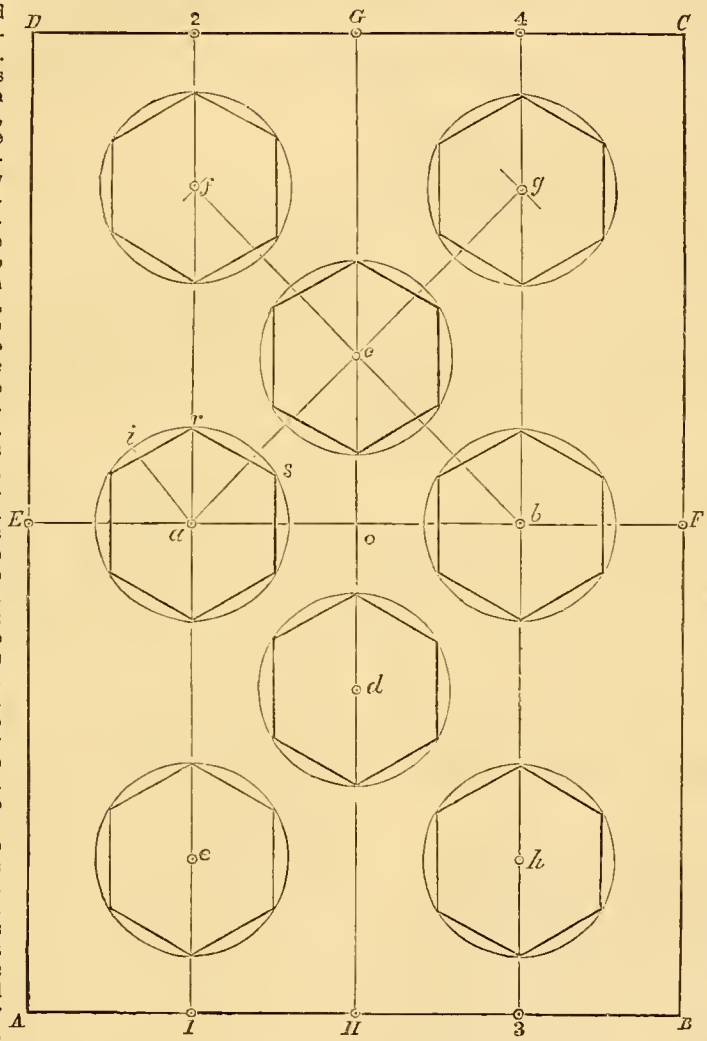


Fig. 33. Scale 12 feet to the inch.

CHRYSANTHEMUM CULTURE.

I can assure Mr. H. Benham (see vol. xix., page 472), I have no wish to mislead him, nor anyone, in my notes on Chrysanthemums; and when I said, Give no manure water till the buds are formed, I merely gave my mode of treatment for the last three years. I am perfectly aware I differ on this, as on several other subjects, from many practical gardeners, still as long as I confine my remarks to what my own practice has taught me, no harm can be done.

Reverting to the subject of liquid manure for the Chrysanthemum, I say pot the plants in good rich compost, withholding manure water till the flower buds are well set, then give it in moderation. I might possibly be tempted to use it earlier had I not the material suitable for their growth. My own opinion of manure water is, that it has a tendency to create an undue circulation of the sap, thus causing the plants to make more wood than is necessary, and not giving any addition in size to the flowers, whilst by giving it as I do when the buds need additional stimulus, it improves them very much. I am perfectly aware that this is quite at variance with the practice of most good growers, but having tried theirs under various circumstances, I prefer my own system. Plunging is and may be very well for those who have not the time nor means to attend properly to the watering, for, as I said before, nothing suffers more than the Chrysanthemum from being short of water. I consider it better to be without them if you neglect them once. I am perfectly aware of the extra water they

require, but where there is a regular system of watering, and one man for his own work, no evil results can accrue to them owing to their not being plunged. In my own case I prefer my plants not to be plunged, as less skill is then required to water them. Plunged plants have this disadvantage, that they require far greater attention in watering. I have seen plants which have died simply through overwatering. Of course, a keen practical man can tell at a glance the plants which require watering, but to an inexperienced hand the difficulty is great. The Chrysanthemum is naturally a gross feeder and likes plenty of water, still it is possible to overdo the watering. I this year had an argument with a gentleman respecting plunging plants out of doors, and the gist of my argument was, that I considered the water that passed from the plants, especially if manure water is given, had a tendency to become sour, and unless the bed or whatever they were plunged in was well drained, the plants would in a manner absorb their own refuse. My idea may be wrong, still it is so.

I have for three years given the bulk of my Chrysanthemums their last shift the first week in August, and, of course, I should not do so, it being as convenient for me to pot in July as August, if I found no benefit from it. The Pompons and a few early kinds are potted in the first or second week of July, but the plants I have now in flower were potted in August. I have a very distinct recollection, in the year 1864, I being then in Cheshire, of potting in the middle of August a few Chrysanthemums which had been overlooked at the early potting, and notwithstanding the prediction of the head gardener as to their failure, they proved the best of the season. A considerable amount of care and thought will be required as to what plants are best suited for late potting, so as not to overpot them; for my own part I would not repot a plant in August unless it was in good condition and likely to be benefited by the shift. In potting in the first week of August the roots should be at the sides of the pot at the end of the same month, thus leaving the whole of September and two weeks of October for the plants to make and perfect their flower buds.

I am open to conviction, and no one can read the Journal with more interest than I do, though I find much to differ from; and in writing these short notes and in all others, I give to the public a few of my practical observations, trusting they will be received in good faith, even though they do not coincide with the general statement of things.—Stephen Castle, *Bent-Hill Gardens, Prestwich.*

P.S.—Since writing the above I have been referred by a friend to an excellent article in the Journal of August 19th, 1869, written by Mr. R. Fleming, gardener to R. Houghton, Esq., Sandheys, Waterloo, Liverpool, in which, though his treatment differs from mine in many respects, still on the subject of manure water, he says that the time to apply liquid manure is when the plant shows the buds. In this, of course, I perfectly agree.

WAR ON FRENCH GARDENERS.

A letter which has been received by field post from a young German gardener with the army round Paris, dated 4th of December, will be read with interest. The letter runs as follows:—

"Alas, that I should have such sad things to tell you of the gardens! they are completely deserted, and all the fine collections are left to ruin. I speak especially of the establishment of Messrs. Croux, Durand, & Son, at Bagneux. Croux's establishment is occupied by the Bavarian artillery; in the large Palm house the horses are put, which eat the tall plants like fodder. The splendid Conifers (Wellingtonias, Picea Pinsapo, Deodar, &c.), which lately were there in large numbers in their greatest beauty, are ordered to be made into a hedge in order to block out the view from the batteries of the French forts.

"But still worse is the condition of Croux's establishment at Aulnay. In the Jardin pour études Pomologiques the splendid trained trees are quite destroyed from the breaking of the wires which supported them, and now about two thousand sheep and from eighty to a hundred cows are in the gardens, and of course eat up everything.

"Not less sad is it to see the state of the gardens of Durand fils, near Clamart. The greenhouses are mostly destroyed by the thick shower of bullets, and the plants in them withered or frozen. The day before yesterday these were exposed to —6° R. [18½° Fahr.], and yesterday covered with snow."

[The above extract from a German newspaper has been sent to us by a correspondent at Hamburg.]

New Violet.—A correspondent in Honolulu, after making a botanical tour in the Kaala range, says, "Botanising on this island is not without considerable danger. Only imagine descending a steep decline of 70°, which had to be done chiefly by swinging from the roots of one tree to the branches of the next one below, and that at a height of 2000 feet above the deep gorge beneath our feet." Nature, however, seems in all cases to provide a reward for her admirers who voluntarily expose themselves to such dangers for the purpose of bringing to the eye of science her numerous hidden beauties, for the writer continues to say, he was not a little surprised by the discovery of a Violet with splendid snow-white waxy flowers, some of which were almost half an inch in diameter, and exquisitely perfumed. He considers it probably a variety of Viola chamissoniana, which he found in its ordinary state lower down in the forest; but the pure white flowers stretching out their long peduncles above the surrounding low undergrowth, and luxuriating in the full sunshine of an azure blue sky, far exceed in beauty those of V. chamissoniana, which are of the ordinary violet colour.—(*Nature.*)

SLOW COMBUSTION, AND ECONOMY IN FUEL.

I observe in your Journal of October 27th, that "R. S." has succeeded in keeping up the heat of his greenhouse by having two holes drilled in the ashpit door. Will he kindly say is it the ashpit door he had the holes drilled in, or the fire door? because very few flues have doors to the fire as well as the ashpit. Would you state if it would not be better to have a regulator on the fire and ashpit door to regulate the fire, instead of the damper? as I fancy the damper prevents the heat rising. My boiler is a conical one with a jacket, and the fire, to go up the chimney, has to go through it, but it takes a great deal of fire and attention to keep the heat up. Can you give me any idea how large a fireplace should be to allow of sufficient coals being put on to burn and to keep up the heat during the night?—A. Y.

[We have no doubt that "R. S." in alluding to the holes made in the ashpit door, at page 321, does mean the ashpit door, and not the firebox, or furnace door. Perhaps "R. S." may have something to add to his interesting article. Meanwhile, we may say that where economy in fuel, and sufficient heat, and slow combustion are required, both the furnace door and ashpit door should be made to fit as closely as possible. Many of the best makers of these doors send out ashpit doors fitted with a valve or other moveable opening to regulate the draught, and this would avoid the expense of cutting out the hole and fixing the valve over it. We should not like to intrude an opinion into this domain of "R. S.," though we should incline to think that one hole in the centre, with the valve, would have been sufficient. When once a fire is lighted and burning freely, it is amazing how small a quantity of fresh air is necessary to support slow regular combustion. On this principle all our best iron stoves are made. The valve in the ashpit door can thus be screwed up, so as to leave not more air on than that alluded to by "R. S." It is by the ashpit opening that the combustion must be regulated. Many iron stoves have also a small valve opening above, and, therefore, over the firebox and fuel—not so much or at all for ensuring combustion, as to prevent smoke going up and choking the small iron chimney.

When you inquire whether it would not be well to have a regulator on the furnace as well as the ashpit door, to regulate the fire, instead of the damper, we must answer Yes, and No. Yes, so far as we have stated above, the ashpit regulator would regulate combustion, and that can be done to a nicety only as the result of watchful attention, and noting the state of the weather. Yes, too, so far as a very little air coming over the fuel would tend to lessen, and mostly consume the smoke. But, then, as to these rendering a damper unnecessary, when a small house is to be heated economically from a boiler, we say decidedly No. In heating by a flue, a brick stove, an iron stove, or an earthenware stove, in a house of any sort, there is no necessity for a damper. After the fire is fairly going, a little slit in the ashpit door will not only regulate combustion, but will concentrate the most of the heat in the flue or stove. But with boilers, and especially conical boilers such as yours, where the heat passes so quickly into the chimney, a damper is important for concentrating that heat round the boiler, instead of allowing it to go up the chimney so easily. If the damper is close-fitting, it should not go quite home, but a quarter of an inch or less would permit of slow combustion. We find this matter is simplified by having a close-fitting damper across the chimney, but with a hole an inch in diameter in the centre, so that there shall be a passage

for smoke and heated air, and yet a surface presented to throw back the greater amount of rising heat over the boiler.

There are here two things well worthy of attention. First, many of our readers who are new to such matters become confused in so much talk about slits in furnace doors and confining heat by dampers. This would be simplified if it were understood that a good heat must *first* be obtained before either regulating slit or damper can be used. In producing that heat there is no means for preventing waste of heat up the chimney at first. Thus, if we went to the furnace of "A. Y.," with the fire out, we would clean out the firebox, clinkers, &c., keeping the ashpit door shut, then we would clean out the ashpit, making for our own comfort as little dust as possible. In all that "R. S." says of a clean ashpit we thoroughly agree. Were this little matter better understood, we should not have young fellows coming in dire perplexity telling us that the fire would not draw, and no wonder, when the ashpit was stuffed up to the bars with ashes. Any old washerwoman would have shown more sense. Catch her suffocated with smoke because the ashpit was filled up!

On lighting the fire we would leave the ashpit door open to have a good draught, waste of heat notwithstanding, just as in lighting a fire in an iron stove we would leave the ashpit door partly open until we had a good fire. It would only be when we found the pipes from the boiler getting warm we would partly shut the furnace door; then when warm enough, shut it altogether, and merely admit a little air by a valve or otherwise, and shortly afterwards we would use the damper, as our object would be to continue the heat by slow combustion, and not to make it greater. It is possible by a careful use of the air at the ashpit door that the damper may be rendered as unnecessary in the case of a boiler, as in that of an iron or a brick stove, but according to our present impressions we should like to have the damper in addition.

We have frequently stated that for a small single house heating by hot water cannot but be expensive, as the waste is so much greater in proportion to the small space heated. Hence, for small detached greenhouses, heating by a flue either above or below the floor will always be more economical and require less trouble than hot water. In large houses, or a series of houses, the matter is different. The economy consists in the heat being pretty well absorbed *in a clean flue* before the heat reaches the chimney, and then because the material of the flue holds heat once given to it longer than water.

Our experience with stoves led us first to be thoroughly convinced of what we had previously acted upon—the small quantity of air sufficient to keep up a slow combustion and the necessary heat after that heat had first been obtained. Just bear in mind that the damper and ashpit valve become valuable only after heat has first been obtained.

Here we may add, that provided "A. Y." has a close-fitting ashpit door, he might have three or four holes drilled in the centre of it, each about one-eighth of an inch in diameter, before going to the expense of brass valves, and if he do so, will he kindly report the results? We shall be sure to find better data in such cases than from the furnaces of large places, as there it is so difficult to get little matters attended to—even valves are knocked to pieces with a stroke of a poker, or a barrowload of fuel is pitched over them, and there is nobody to bear the blame. Attentive amateurs will be our best help as respects economic heating.

The second matter to which we wish to allude is simply this, that a small boiler and as small a furnace as possible are by no means synonymous with economical heating. A gardener of large experience, who has taken to a small nursery, has lately told us the trouble he has had in heating a house with a small boiler, and the furnace so small that two or three spadesful of fuel fill it. Now, in such a case there must have been almost constant poking, and, of course, valves and dampers must have been at a discount. The boiler in this case was placed according to what we believe to be a too-general error; small as it was, it rested on the level of the firebars; the belief somehow having got about that the more the boiler formed the firebox, the greater would be the heat absorbed. Now, in several such cases as that referred to above, great advantage, and economy in fuel too, have been obtained by letting the little boiler remain as it was, and sinking the firebars beneath it to the depth of one or two firebricks; more firing could thus be used at a time, and when the heat necessary was obtained, the continuous heat could be easily regulated by the ashpit door and damper, without so frequently and wastefully poking the fire.

We think these simple matters more important than what "A. Y." further requires, "How large a fireplace should be to allow of sufficient coal being put on to burn, and to keep up heat during the night?" but we shall be glad if some reader will contribute to the object desired. For ourselves, long ago we made some experiments in this way, but we found that difference of fuel and difference in circumstances made such astounding differences in results, that we came to the conclusion that no rule thus obtained could ever take the place of careful watchful attention to individual cases. A furnace to consume such fuel as "R. S." uses, may be much smaller than a furnace to be supplied with ashes, cinders, breese, or the cheapest and best heat-giving fuel. A very small furnace, unless for a very small place, is generally a mistake every way, and by the poking, and punching, and frequent supplies required, consumes more fuel than if it had been larger. A similar error is constantly committed by those who have their little houses heated by hot water, which houses could only be safe in such severe weather as we now have, by heating the water nearly to the boiling point. It would be far more economical in the long run, and better in every way, to have a third more piping, and never have the water higher in temperature than from 160° to 180°. A first saving here is anything but ultimate economy.—R. F.]

NEW BOOK.

The "Field Quarterly Magazine and Review." Vol. I. London: H. Cox.

Four issues of this quarterly publication are now united in a well-bound volume. The contents are exclusively good selections from the *Field* weekly newspaper, and combine especially information relative to all our national sports and the country house.

LATE PEAS NORTHWARDS.

After two months' silence Mr. Porter now says I put Veitch's Perfection in the wrong place as a late Pea, which I emphatically deny; I say this as my own experience, which is more than Mr. Porter can say, for had he grown it and Ne Plus Ultra side-by-side, he would have proved the difference to be in favour of Veitch's Perfection. If this has any weight, I may say that I exhibited at the Prestwich Floral and Horticultural Show in August, 1870, a dish of Veitch's Perfection as well as Ne Plus Ultra, and the first prize was awarded to Veitch's Perfection, which also took the same honour in September at a local show held a short distance from here. Has any practical gardener (which Mr. Porter is not) accustomed to this part of Lancashire seen Peas late in November? Certainly neither Mr. Porter nor anyone has done so this year, though it is a pity he does not state the exact date (he says late in November), and if he saw Peas growing after the 20th of November. Between November 20th, and the same date of December, the frost at night varied from 3° to 9°.

Ne Plus Ultra is undoubtedly a first-class Pea, as I said at page 324, but I have yet to learn that it is better than Veitch's Perfection for late supply. I distinctly remembered that when I pulled up, at the end of October, the haulm of Veitch's Perfection, sown at the same date as Ne Plus Ultra—though Veitch's Perfection was a week later in coming in—Ne Plus Ultra was quite dry, while the other was quite green. Though, as I stated, I gathered the last dish on September 30th, it was by no means the last of the Peas, as I found them very useful for soups up to the end of October. I have no doubt what I gathered for soups would have made some families dishes, but I ceased gathering as soon as the cook said the peas boiled irregularly. I intend seeing whether it is possible to gather good peas, say, at the end of October and beginning of November. I have not seen any at that time good, but merely fit for soup, whether in Staffordshire, Cheshire, Derbyshire, or Lancashire.—Stephen Castle, *Bent Hill Gardens, Prestwich, Manchester.*

DARLINGTONIA CALIFORNICA.

Messrs. Veitch & Sons have grown this plant for a considerable time in their houses at Chelsea.

In London, as in California, this curious plant possesses the same irresistible attraction to insects, and as I have repeatedly examined living plants at Chelsea, perhaps the following notes may have some interest.

This so called Pitcher Plant, when fully grown, resembles in

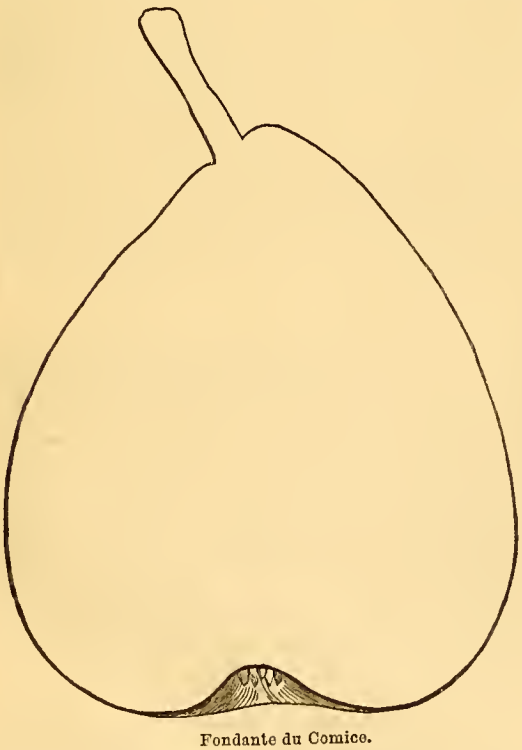
shape the upraised head and body of an excited cobra, with hood expanded and prepared for a spring; the head is at right angles with the hollow vertical body, and apparently presents no opening by which an insect could enter; under the place where the lower jaw would be, hang two large reddish appendages like the wattles of a fowl. At Chelsea this plant possesses such an extraordinary attraction for flies (principally blue-bottles), that the hollow "pitchers" are generally full of their dead bodies; what this attraction is I am unable to say, as the plant is scentless.

Last year I had a Darlingtonia before me for some three or four hours, whilst sketching it, and I then observed that the blow-flies made straight for it immediately they entered the room. Insects alight on the red wattles and then fly upwards into the (previously unseen) red-lipped entrance to the tube; owing to the sudden twist in the neck of the pitcher, they are at once compelled to descend the hollow body, and, as far as I have observed, they never return alive. They keep up a buzzing noise for half an hour or so, and then apparently die.

The old pitchers are generally full of dead flies, &c., and the lowermost insects, in rotting, cause the pitchers to decay and split, the flies within being then displayed. These dead flies often drop out through the fissures and become grouped round the bottom of the plant.—Worthington G. Smith.—(*Nature.*)

NOTABLE PEARS.

Fondante du Comice.—As a society there is none which has done more for the advancement of pomology than the "Comice Horticole of Angers." Like the Royal Horticultural Society of London, it is one of the few that enjoy the privilege of possessing a garden where horticultural experiments are conducted, and where pomology receives more than ordinary attention. The number of new varieties of fruit which have originated in that garden is sufficient evidence of this statement; and the mere fact that such Peare as Doyenné du Comice, Fondante du Comice, and Cassante du Comice, have originated there speaks highly in favour of the establishment.



Fondante du Comice.

Fondante du Comice, which we now introduce to our readers, first fruited in the Society's garden at Angers in the year 1849. It has been slow in coming into notice in this country, probably from the ignorance of cultivators of its merits. Six years ago we met with it in the collection of M. André Leroy, at Angers, to whose courtesy in furnishing us with numerous specimens of the new varieties of fruits raised in that city, we now acknowledge; and during the past season it has fruited in the garden of the Royal Horticultural Society at Chiswick. Having now ascertained to what extent this variety is adapted to our climate, and having found it worthy of notice, we take an early opportunity of making our readers acquainted with its merits. It is only when foreign varieties have been grown in this country that any confidence can be placed in their reputed characteristics.

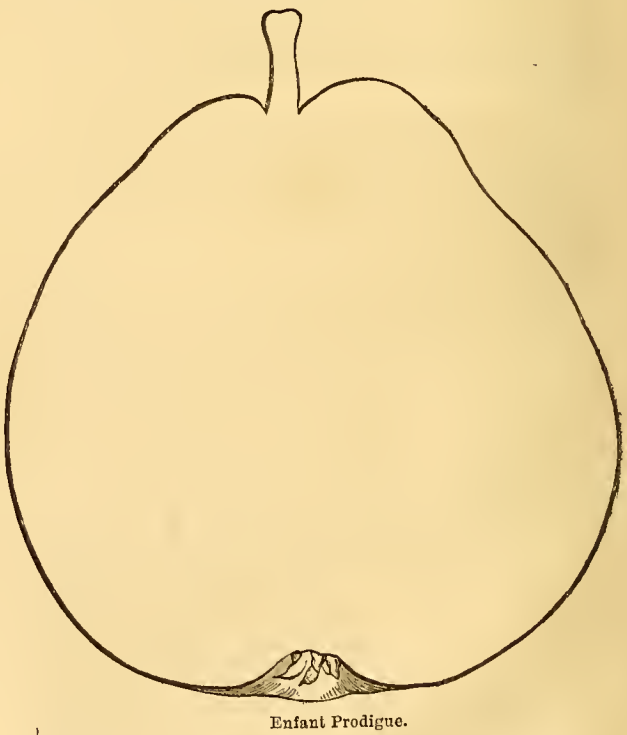
This variety is obovate in shape, even and regular in its outline, smaller and more symmetrical than when grown on the Continent, where it is rather uneven. Skin smooth, of a uniform yellowish or pea green, covered with distinct markings of russet and russet dots. Eye small and open, with erect acute segments, set in a very deep and smooth round basin. Stalk woody, also green like the skin, about an inch long, and inserted obliquely with a fleshy lip on one side of it. Flesh white, crisp, very juicy and sweet, slightly acidulous, and very refreshing, being in this respect somewhat similar to the old St. Germain.

Ripe in the end of October, and the beginning of November.

The tree is a good bearer, and not at all a strong grower. It succeeds best on the Pear stock, and as it makes rather an awkward pyramid, the bush form will be the most proper for it.

Enfant Prodigue (syn. *Rousselet Enfant Prodigue: Nectarine* of Leroy, erroneously).—This is one of numerous varieties raised by Van Mons, which keep cropping up periodically, as additional evidences of the indefatigable labours of the industrious Professor. It was raised about 1830 in his garden at Louvain, and although it is well known on the Continent, it has never been much cultivated in this country. It is not always of first-rate quality, but in situations such as the west of England, and other favoured localities, where it does succeed, its fine brisk sweet juice and high flavour commend it as a variety well worth growing.

The fruit is variable in size; the specimen here figured being larger than is usual. It is uneven and bossed in its outline. The skin is clear dark green, changing as it ripens to pale yellow, which is sometimes quite obscured with veins and



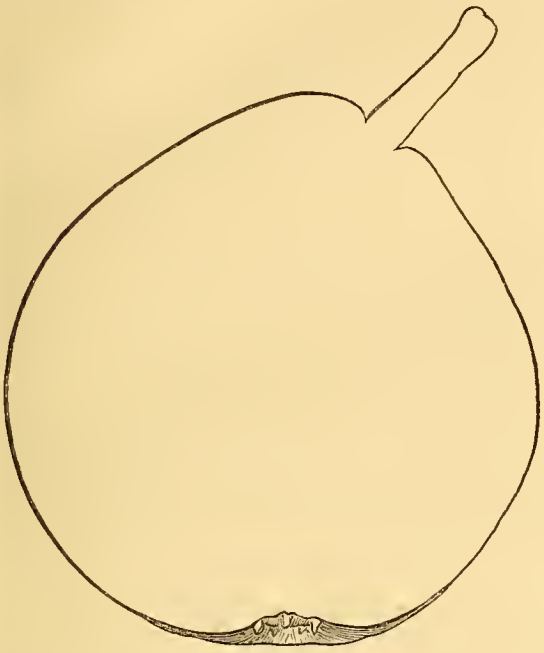
Enfant Prodigue.

mottles of cinnamon-coloured russet. Eye large and open, with broad, flat, leaf-like segments set in a rather deep and uneven basin. Stalk half an inch long, woody, set in a wide shallow depression. Flesh greenish under the skin, crisp, and half melting, very juicy, sweet, acidulous, and with a fine aroma partaking of that of the Seckle.

An excellent Pear, with a fine acidulous flavour, ripe in the beginning of October, and continuing in use throughout the month.

The tree is a good bearer, and forms a handsome pyramid.

Millot de Nancy.—We have here a posthumous variety of Van Mons', of which the earliest information we have is in 1843, when it was named by the son of the Professor in honour of M. Millot, of Nancy, an ardent pomologist. We have grown it for the last twenty years in this country, and proved it to be of the highest excellence. In some seasons, as for instance in 1866, it was somewhat astringent in flavour, but generally it has proved excellent.



Millot de Nancy.

The fruit is roundish, inclining to turbinate, even and handsome in its outline. The skin is smooth, of a uniform coppery red or warm cinnamon colour caused by a coating of russet over its whole surface, and dotted with ashen grey dots. Eye rather small and open, set almost level with the surface. Stalk about an inch long, woody, fleshy at the base, straight, and obliquely inserted in a very slight depression. Flesh whitish, half melting, very juicy and tender, rich, sweet, brisk, highly flavoured, and with a fine perfume.

It is a first-rate Pear, ripe in October, and during November.

PORTRAIT OF MR. RIVERS.

The following additional subscriptions have been received :—

	£	s.	d.
Barron, Mr. A. F., Chiswick	0	10	6
Rivett, Mr., Stratford, Essex	1	1	0

WORK FOR THE WEEK.

KITCHEN GARDEN.

It is hoped that, in accordance with repeated injunctions, the wheeling of manure and trenching-up vacant quarters in this department have been regularly and systematically followed up in favourable weather. Let this kind of work be continued as often as opportunity offers. All green refuse and decayed matter when trenched-in should be strewed over with lime to hasten decomposition and destroy insects. Choose also the opportunity of dry frosty mornings to fork-up ground previously trenched, so as to get the surface in good working order; if severe weather continue but little can be advised in the way of cropping. If, however, a change take place and the ground can be worked, the first opportunity must be seized to make a second sowing of *Broad Beans* and *Peas* on a warm border. Sow a moderate breadth of Early Horn *Carrot* and Short-top *Radish*, to be sown in drills alternately, covering with healthy sandy soil, and protecting with any available matter. An excellent method of fastening down such material is to place long willow rods at convenient distances, pegging them down at each end with a strong hook. *Cauliflowers* under handlights require constant attention. Keep the surface stirred. An excellent plan to catch slugs among these is to split large Carrots and lay the pieces about the plants; by picking them off on mild mornings, an immense number of slugs may be taken.

FRUIT GARDEN.

Continue the pruning and nailing of the hardier kinds of fruit trees at every opportunity, have a good plank to stand upon, and if very cold wear also a large pair of wooden clogs. No considerate master will ever censure a man for being careful of his health. In pruning and nailing wall trees let them be entirely removed from the wall, which should be swept with a birch broom, if there is any fear of insects lodging in the crevices; the trees should then be renailed with fresh nails and shreds, using as few as possible, and of strength according to the size of the branches. The pruning of Currants and Gooseberries should be deferred for a time, as if sharp weather prevail during this and part of next month, birds are apt to be very destructive to the buds. Prune espalier Apple and Pear trees, and fork-up the ground about them in frosty weather to disturb and destroy insects. In the orchard thin out cross and crowded branches from Apples, Pears, and Quinces, it is a great mistake to leave too much wood. Scrape off moss and lichen from the stems, and if time will serve, dress both these and espalier trees with a mixture of quicklime and clay brought to the consistence of thick paint. If this be done well, there will be no need to scrape them for some years.

FLOWER GARDEN.

All is hard as adamant here; we can do little until the Snowdrops begin to peep up. Some kinds of ground work may be proceeded with, and the mattock or pick will be in request. Should the present severe weather continue, the chief operations will consist in giving additional protection, and in covering those plants which in ordinary seasons it is not necessary to protect. Roses must have additional coverings to the roots—such as litter, moss, leaves, or sawdust, and the tops must be protected with straw, hay, fern, or evergreen boughs—in fact, anything of the kind, and the drier the material used the better. The same remarks apply to climbers on walls; over these mats may also be fastened, for although coverings are not required to be firm, the mats are useful in keeping the other materials dry and clean. Auriculas will now begin to require some extra attention independently of keeping them perfectly clear of dead leaves, which must be removed very gently for fear of injuring the root or stock. They may in mild weather have an occasional watering, carefully guarding against any moisture remaining in the heart. Give all the air possible, taking care to cover the frames well at night. Look over the beds of Pinks and Pansies; plants which have but lately been removed are very liable to be raised by the frost; these must be carefully fastened by pressing the soil gently to them when it is tolerably dry. The soil which has been exposed to the action of the frost, may the first fine day be returned to the Ranunculus beds in order that they may settle down before planting. Carnations must be carefully gone over, those in beds fastened if loose, and cleared of dead leaves, which when lodged on the plants retain moisture which is injurious to them.

GREENHOUSE AND CONSERVATORY.

Keep the conservatory at a temperature of about 45° by night, raising it to 55° in the day, with plenty of air at every favourable opportunity. Keep the atmosphere moderately moist, as much for the preservation of the flowers as for the comfort of the visitors. Keep every part of the house as clean as possible. Remove flowers as soon as they become shabby, and endeavour to concentrate the floral beauty of the place in this one house. Stove plants will suffer no injury for a few days in the above temperature, but hardwooded greenhouse plants, as Heaths, should not remain more than a few days at a time in such a temperature. Take care that the Camellias do not suffer from want of water now they are blooming. Prune, train, and clean the climbers on the rafters, &c. The greenhouse in the generality of establishments is a mixed affair, where hardwooded and softwooded plants are obliged to be together. In such places a compromise must be made in the treatment by keeping it a few degrees warmer than Heaths and other Cape plants require, and yet sufficiently warm for Pelargoniums, Calceo-

larias, &c. Arrange the plants in groups, so that air can be admitted to the Heaths at times when it would be injudicious to admit it to softwooded plants. Admit air at all favourable opportunities, but be careful of north-east winds.

STOVE.

Now that the shortest day is past, some of the plants which it is intended to make the most of during the growing season may be started gently, preparatory to being potted, towards the end of this or the beginning of next month. Among these, such plants as Ixoras, Allamandas, and Dipladenias may be started. Do not increase the temperature much this month, except by taking advantage of sunny days, and then a syringeful of water may be drawn over the plants without any risk of doing injury. All the plants wanted for late blooming must be kept back for the present. If not done before, the whole of the Clerodendrons must be shaken out, their roots reduced, and repotted in small pots in light sandy-loam compost. Place them in heat until they have made shoots about an inch long, and then, unless required to bloom very early, they may be preserved for a time in a lower temperature. Luculia gratissima, as soon as it has done blooming, must have the side branches shortened-in a little, and be placed in heat to produce cuttings for propagation. As soon as the shoots are 2 inches long tie a tight ligature below the lowest joint, and when the bark has swelled a little, say in about a fortnight, the cuttings may be taken off, potted singly in very small pots, plunged in a gentle bottom heat, covered with a hand-glass, and they will strike very readily.

FORCING PIT.

Remove the plants to the conservatory as fast as the flowers expand, and introduce others from the reserve for succession, placing them first at the cool end of the house or pit, so as to excite them gradually. A few Pinks and Sweet Williams may be started, and plenty of Lily of the Valley, Sweet Briar, and other sweet-smelling plants. Gardenias must also be started, and as the Stephanotis is a great favourite with the ladies, a plant or two should be placed in the warmest end of the pit. Maintain a growing moist temperature of from 60° to 65° or 70° with sun heat.—W. KEANE.

DOINGS OF THE LAST WEEK.

ON New Year's-eve we have similar weather after a week of keen frost, as we had at Christmas-eve. Very fortunately the frost has been greatly counteracted as respects vegetables and Wheat fields by the frequent fall of snow, which will be of great protecting benefit to everything beneath it.

Our chief work out of doors (for ground work or moving earth was impossible) was wheeling the rubbish-heap and soil, and, on cutting a spinney, collecting flower *stakes* and Pea stakes, stakes for Hollyhocks, Dahlias, &c., in a rough state, so that we could finish them at home in unsettled weather. We prefer for flowers clean straight stakes with the bark on, to deal and lath sticks, however nicely whittled. The object of a stake is merely to support a plant, but the less the support is seen the better.

In most gardens the number of sticks required from one-eighth of an inch in diameter to 2 inches across is astonishing. Preferring those with bark on them as less conspicuous, it is always advisable to have a quantity laid up in store, and not be forced to try and find some at seasons of the year when going into a coppice for them might give offence, from disturbing young game, &c. A gardener now-a-days, to obtain what he wants, must keep his eyes about him. When such small sticks are pruned and straightened, it is well to put them into bundles, tied firmly, which keeps them in the desired position. Pea stakes can also be arranged in sizes, and pointed on bad days, when men could scarcely stand out. Collecting and bringing them home was good work for the frosty weather, as most of the snow has come on at night. Some time ago we made remarks on pointing sticks. For good-sized ones, three strokes of the bill are sufficient. For small flower sticks, two strokes of the knife are sufficient—the first slips off the half of the diameter at the base, the other takes away the half of what remains, leaving a neat point. We have seen more whittling over the point of a little stick than would have done for more than half a dozen of a similar size—a matter of importance where myriads of these are used.

In-doors, besides the general attention as alluded to last week, the chief work has been cleaning and picking over plants where they had any leaves not quite healthy, and attending to their various wants, giving as little water as could be to keep things right in such severe weather.

The following matters have also received, or should now demand attention :—

The orchard houses, on cutting the last Grapes, the roofs being covered with snow, were again well smoked by burning partly broken and bruised laurel leaves. This was done generally by way of precaution, as it could do no harm, and few insects can stand the pungent smoke, quite as obnoxious to some insects as the smoke of tobacco, whilst it costs nothing but getting the laurel leaves and young shoots. The roofs being rather open, it would of little use smoking the houses unless they were covered with snow.

Some Pear trees that had a little scale on the branches we meant to have syringed with water during this keen weather, so as *to surround the branches with a layer of ice*, but on examining those we meant thus to serve, we find that the heat of the day had sufficiently melted the snow to enclose the wood in a film of ice. As it would be impossible for air to pass through a good ice covering, we found frequently that when such ice scaled off in a change of temperature, the scale, &c., peeled away with the ice ; the more firmly the ice surrounds the branches, the more effectually will it act as an insect-destroyer. Sheeting fruit trees on walls with ice is, therefore, often a benefit; we have consequently found it useful in severe frost to syringe a tree all over, and for convenience and greater benefit to use heated water, as the transition from heat to cold was all the greater. We never knew hardy trees injured by this treatment, whilst the water filled all the crannies in the wall, and made that too a sheet of ice, shutting-up from free access to air what living things might be in holes and crannies. There is, however, one drawback against such a water application to wall trees in severe frost in winter. If the wall should be of stone, soft and porous, or of bricks rather soft and not thoroughly hard burned, if the frost should be severe and continuous, there is a risk that the ice will bring pieces of the wall along with it, and thus accelerate its decay. It is anything but economy to use soft inferior bricks for garden walls. They absorb moisture like a sponge, and when once the outside peels off, they become little better for all practical purposes than so much dried hard-pressed mud. We should not like, therefore, to resort to such a plan where the walls were soft. On wood fences there could be no such objection, and we have known of several cases where, from using such inferior bricks, walls would not hold a nail at length, and then it became necessary to front them with wood.

Fruit rooms and late Grapes needed looking over, as lately stated, Pears still being behind Apples as respects keeping. Dahlia tubers, Potatoes, &c., needed more protection from the severe weather. More litter was also placed over Mushroom beds in an open shed.

Protection.—Where a high temperature is required, a little protection over the front glass does much to render less firing necessary, and thus there is less drying the air inside, and less necessity for moistening that air artificially, and in ordinary cases getting the moisture condensed so as to fall over the plants in the house. Common iron roofs not kept thoroughly painted soon show themselves in this way, as every rusty waterdrop leaves a stain behind it. When a high temperature is used moisture must be given in proportion ; but in such weather it is often better to let the temperature fall 5° or 10°, so as still to be safe, instead of using more fire heat and consequently more vapour in dull cloudy weather.

All things in cold pits and frames covered up on Christmas-eve have remained covered up ever since. When the thermometer fell more than 20° below freezing point more litter was added, and in one or two cases even above a layer of snow. In such weather, however, we are loth to disturb a surface-covering of snow, as from its open character and white colour it forms one of our best protectors. We just peeped in at times to find all was cool and yet safe. With continuous covering there must be no incitement to growth.

Such a week clearly demonstrates the importance of a small house in which you can walk and work, over a pit or frame in which one can do nothing without opening the sashes. We should have liked to have done work in frames or pits, but the opening of the sashes, except for a very short time, would have been dangerous in such weather, when even plants at all tender could only be moved by placing them in covered boxes or baskets, to prevent their feeling the extremes of temperature. We would have done more potting and proceeded with more

cutting-making, if, without moving sashes, we could have more easily reached the plants.

Obtaining fresh platforms and repairing others prevented our doing so much as we might have done in houses to which we could gain access. Merely for the sake of getting inside, by opening and shutting a small door, a little house will always be better than a place of the same size where every attention and regulation of the plants must be given from the outside.

We may mention that though the wind seems to be veering to the south, the frost is still as severe as ever, and if it should continue a week or two longer we shall let Calceolarias, young Cauliflowers, &c., remain covered up just as they are. When the thaw comes, the cautions given last week must be attended to. In such weather, where there can be no growth, covering and uncovering each day are little better than labour thrown away.

See what was said lately as respects forcing shrubs, Roses, bulbs, &c. All these will be benefited by a gentle bottom heat and bringing them on by a gradual increase of top temperature, the more gradual the better in every way; the buds break more regularly, and the flowers come finer, and on the whole are sooner fit for gathering.

All forcing of fruit trees, if not far advanced, should proceed very slowly, until this keen frost pass away. With the roots protected, if outside, the frost itself would not be a drawback; it is the foggy, cloudy weather that, when much heat is used, causes growth to be more weak and juicy than when we can have the help of more sunshine. Many tubers and bulbs may now be potted, and placed in a cool place. Some of the earliest tuberous Gesneras, may be put in pans until growth is progressing, and then the mode of flowering may be decided on. The tubers of Gesnera zebrina do not keep well unless rather dry, and the temperature not long under 50°. The tenderer Caladiums, if dry, will keep in an average temperature of 60°: if much lower for any length of time they shrivel and rot. Most of the Achimenes will be safe in a temperature of from 45° to 50°, either in dry soil or sand. These may be picked out now, and placed in small pans in a mild heat to set them going. The same may be said of Gloxinias, easily wintered under stages, &c. They may now be repotted for early blooming.—R. F.

TRADE CATALOGUES RECEIVED.

B. S. Williams, Victoria and Paradise Nurseries, Upper Holloway, London, N.—*Descriptive Catalogue of Flower, Vegetable, and Agricultural Seeds.*

Charles Turner, Royal Nurseries, Slough.—*Catalogue of Seeds for the Kitchen, the Flower Garden, and the Farm.*

Child & Lorimer, 49, Darley Street, Bradford, and Bradford Nurseries, Shipley.—*General Seed Catalogue and Garden Guide.*

TO CORRESPONDENTS.

*** We request that no one will write privately to any of the correspondents of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By doing so they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely to The Editors of the Journal of Horticulture, &c.*, 171, *Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

Books (*Sigma*).—You can have the "Orchid Manual" free by post from our office if you enclose thirty-two post-office stamps, with your address. All the leading nurserymen publish priced and descriptive lists of Camellias. They would send the lists by post if asked. (*G. B. Anstruther*).—The price of the "Cottage Gardeners' Dictionary" with the Appendix, is 6*s.* 6*d.* You can have it free by post from our office for 8*d.* extra. (*A Subscriber*).—"Florists' Flowers for the Many" gives full directions for Pelargonium culture. You can have it from our office post free for five postage stamps.

Cyclamen Seedlings Blooming (*J. Wiggins*).—Though you have not succeeded in blooming them until they were fourteen months old, it is quite certain that others whose communications we have published, have bloomed them when ten months old. Read what they say and are still saying.

Portable Orchard and Greenhouse (*H. C.*).—If the woodwork is not fixed into the wall, nor to the brick foundation, the whole may be removed legally.

Roses (*W. H. B.*).—The Roses named are nearly all of them old sorts, which have been superseded by newer and better ones. François Arago is velvety maroon, a robust grower, and still a good Rose, though too flat. Madame Laffay, red, moderate grower, far surpassed now by other varieties. La Reine, bright rose, large and full, but often opens badly; at times a very fine Rose, but very capricious. Catherine Guillot, deep rose, a Bourbon, and a free bloomer; still worth growing. Reine des Violettes, violet rose, a bad-shaped flower, apt to fade. Jacques Lafitte, deep rose, a strong but coarse flower, and not free; no longer worth growing. Abd el Kader, dark plum, not full, shy bloomer. Of the seven, only François Arago, La Reine, and Catherine Guillot are worth growing, and not one, we think, worth naming in a list of fifty, though if we were planting one hundred varieties, we should find room for them.

Pear (*J. B. White.*)—Colmar Epineux is a synonym of the Passe Colmar.

Nuts (*C. N. B.*).—"Fruit Gardening for the Many" contains what you require. You can have a copy from our office free by post if you enclose five postage stamps with your address.

Sowing Aucuba Berries (*A Subscriber, Tralee*).—When the berries are ripe, which will be known by their parting readily or falling from the plant, sow them in well-drained pans three parts filled with turfy yellow loam two-thirds, and one-third leaf soil, and cover with a thickness of fine soil equal to the diameter of the berries. A gentle watering should then be given, and the pan placed in a cold frame. The soil being kept moist, the seeds will vegetate, if good, in due season.

The Egyptian Melon (*G. S.*).—We believe it is to be had true. It is in the catalogues of trustworthy seedsmen, and many gardeners preserve the seed for home use.

Protecting Pampas Grass (*Anthony and others*).—The following from a correspondent opportunely answers your inquiry—"A good protection for the Pampas Grass is a bamper without the bottom, turned the wrong way up, and filled with dry leaves.—C. L."

Grapes (*A Grower of Grapes*).—If the Tokay Grape that was exhibited was the true one it is an excellent late-hanging Grape, but certainly inferior to the White Muscat of Alexandria. We cannot, on any principle of common sense, understand why at the Darlington Show black Grapes should be judged by appearance and white Grapes by flavour, the black being Lady Downe's and Oldaker's West's St. Peter's, and the white, Muscat of Alexandria and Tokay. If no condition to that effect was given in the rules it is an injustice to exhibitors; and the judges who would act thus on their own responsibility are unfit for their office.

Young Trees Barked by Hares (*J. K.*).—If your trees are barked completely all round to the height of a foot you may take them up at once and plant afresh. If only barked here and there in that space, cover the wounds with some grafting-wax or other similar protection, and dress the whole of the trees within reach of the hares with a thick paste of night soil and stale urine from the stable.

Select Single Fuchsias (*A Subscriber*).—*Dark:* Vesta, Enoch Arden, Lord Derby, Mr. Disraeli, Father Ignatius, and Glowworm. *Light:* Mrs. Bland, Mrs. Shirley Hibberd, Rose of Denmark, Picturata, Brilliantissima, and Guiding Star.

Select Pentstemons. (*Idem*).—Arthur M'Hardy, James Rothschild, Léon Laprevote, Purple King, Flower of the Day, John M'Pherson, Miss Carnegie. Surpasse Victor Hugo, Sunrise, Mrs. A. Sterry Illuminator and Stanstead Surprise. The habit of Christine Nosegay is good, but as we have seen it, scarcely so free-blooming as could be desired.

Angular Flower Beds (*Penumbra*).—These will be duly noticed in Mr. O'Donnell's directions. Your plans are neat but not novel.

Dwarf Fruit Trees (*An Old Subscriber, Bandon*).—Rivers's "Miniature Fruit Garden" and Bréhaut's "Cordon Training" contain the directions you require.

White Flowers for Easter (*R. L.*).—Lily of the Valley, Spiræa japonica, Hyacinths, Narcissus, and Deutzia gracilis are all first-rate. We know of no flowers that sown now would bloom at that time. Crocuses and Snowdrops ought to be planted without delay, and they will flower naturally by the time you name, or if not, they may be placed in the greenhouse a short time previously.

Camellia Leaves Blotched (*J. P.*).—The leaf sent us is blotched by the sun's rays falling powerfully on it whilst wet. The blotching may have been a result of syringing or of condensed moisture falling on the leaves from the roof. The remedy is to give air so as to have the leaves dry before the sun shines powerfully on them, or to shade from very bright sun. We cannot name plants from leaves only.

Azalea Weak (*Inquirer*).—We would not pot the plant until it had flowered, and then we would shift it, giving a good shift; but could you not reduce its ball, and repot in the same size of pot? Two parts of fibrous sandy peat, half a part of loam from turf, and the same of old cow dung, with plenty of sand, will grow Azaleas well. Good drainage is necessary. Encourage fresh growth by a brisk moist heat, shading from bright sun. We think the growth will be stronger another year. We would not top-dress now, but when the buds begin to swell, you may water with manure water, not guano, but sheep droppings, one peck to thirty gallons of water, or cow dung, one peck to twenty gallons. It is not likely you will succeed in getting leaves as large as those of the young plant, for young Azaleas, as a rule, have larger leaves than plants of considerable size and age.

Select Double Petunias (*Idem*).—Mademoiselle Marie de Saint Innocent, Achille Ragon, Victor, Monsieur Darcy, Gloire des Petunias, Honour, or Gazelle.

Ravages of the Titmouse (*W. B.*).—You ask if we have known "Tomtits" take Peas out of the pods. The first year we grew Dickson's First and Best Pea, we found the peas taken out of the pods as they filled. Sparrows were blamed, as they are for everything, but we found the depredations were committed by the small blue Titmouse, or, as it is known in Yorkshire, "Billybiter." About 200 yards away from the Peas the bird had its nest in a wall, and the two old birds came to the Peas, one of them every three minutes, and returned to the nest with a pea for the young. The small blue Titmouse is a great destroyer of fruit tree blossom buds, and is very fond of pecking at fruit, while Peas are its delight. The large Titmouse is fond of bush fruit buds, but we think its attacks end there, at least we have not seen it interfere with anything except Apples and Pears. "Tomtit" in Yorkshire is the Wren, which is a sportive innocent creature, perfectly insectivorous.

Keeping Cut Grapes (*F. C.*).—Cut off 6 inches of the lateral with each bunch, put that lateral into a bottle filled with water, and store in a cool, dry, dark place.

Orchard-house Pots Frozen (*An Old Subscriber*).—A little frost will do no injury to the roots of fruit trees in pots in an orchard house. If the soil at the surface is rather dry, frost will do still less harm; but it is well to protect from severe frost with a little litter or moss over the pot.

Strawberries in Ground Vinery (*Idem*).—To grow Strawberries in ground vineries, the simplest plan would be to grow them in such a place without the glass the previous year, so as to be well established. If you grow them in pots you will be able to remove an unfruitful pot and replace it by another. When so grown the pots should be plunged in the autumn. It matters but little what the material may be—earth, ashes, cocoa-nut fibre, &c., but if in pots we would place a little rich soil beneath the bottom of the pots when the plants showed their flower trusses. Each mode—namely, the planting out and the growing in pots—has its advantages and disadvantages, the first costing least trouble, the second enabling one to make the most of the enclosed space, and, on the whole, getting a rather better return, but with increased labour and nicety in attending to the wants of the plants.

Vines as Bushes (*Idem*).—We do not think that Alicante, Lady Downe's, or Foster's White Seedling Vines will succeed well as bushes in pots in an unheated orchard house, unless the season happen to be brighter and warmer than usual, as was the case last summer.

Glazed Protectors (*Idem*).—Either of the two systems referred to for protecting winter salads, &c., we think is good. Where a high temperature is an advantage in summer, we would prefer brick to wood. We are doubtful of any advantage in winter from the brick walls of such little places. Merely for keeping out frost, we have almost as much faith in a 2-inch board as in a 9-inch wall.

Vines in Pots (*Subscriber for Twenty Years*).—There is less dependance on the age of the cane of a Vine than on its size, and ripened wood and buds. For instance, you may insert single buds now in small pots in a brisk bothed, repot as soon as the little pot is full of roots, and continue repotting until you have the plant in a 15-inch pot, giving it always bottom heat and a growing top heat until you have the pot full of roots, and the stem strong and well browned by September. Then you might place the plant full in the sun against a fence with a south aspect for a month, and then against a north aspect for a month or six weeks to rest it, even by darkness, if the leaves are all off. You could start that plant again, and get good fruit from it in from twelve to sixteen months from the time of inserting the buds. To do this there must be no neglect, no want of nourishment, &c. Fine fruiting canes may be obtained more easily, but with nearly double the expenditure of time, by not giving the plants so much attention the first year, getting them well ripened in 6 or 8-inch pots, keeping them over the winter, cutting the plants down to a bud, and then starting them early, and putting them into their fruiting pots in time, so as to have the wood well ripened early in autumn. Were we short of labour power, and meant to do much with pot Vines, we would resort to the latter mode. The first mode will succeed, perhaps, as well, but the attention and care required will be greater. The size of pot we have already alluded to—from 13 to 18-inch pots, will ripen a nice cane, that would produce from six to nine bunches of fruit, though fewer would be better, and after that the plant would have done all it could, so that fresh plants would be required. Bear in mind the plant must be thoroughly established in the pot early in the previous autumn. There must be no repotting when you force or grow for fruit, but there may be plenty of rich top-dressing. There is no soil better than fresh fibrous loam from rotten turf that has lain long enough to become sweet. To this add about one-eighth of old lime and brick rubbish, and a little more if the loam is at all stiff, and about as much of boiled bones, broken to the size of small beans. In potting, and especially at the last potting, a small handful of such bones may be placed over the drainage. A little sweet rotten dung may be added, as horse droppings sweet and dry. But more will depend on a rather open compost, firm potting, rich watering, and top-dressing, than on the soil itself being clogged with manure.

Melons Sulphuretted—Pears Ripe (*A Constant Reader*).—Why will not a Melon plant stand sulphur on the hot pipes as well as a Cucumber, they being both of the same family? Why indeed? It is very easy to put a simple question, which the greatest philosopher would be powerless to solve. We speak of the family of man; but how varied in colour, habits, likes, and dislikes! How true is the old proverb, "What is one man's meat is another man's poison!" Setting aside all mere affectation, we find that one lady will rejoice in the odour of certain flowers, whilst the same odour would at once induce giddiness and fainting in another lady. We have known this in the case of sisters, which is rather a closer family alliance than that between the Cucumber and the Melon. We are afraid when we inquire into such causes we shall be forced to own "such things are, just because they are." Our correspondent, however, has alluded to a fact well worth noting, that the leaves of Melon plants will not stand sulphur fumes so hot as Cucumbers will do. Both will suffer if the fumes are too hot. In the case of Melons the pipes should not be more than about 160° in temperature. If a little more, there should be a little air left on. When an injury takes place, it is very often from sun heat meeting the sulphur heat from the pipes before there is a sufficiency of air given. Cucumbers will suffer easily from the same cause, but they will stand fumes from 5° to 10° hotter than Melons. The more robust the plants, the more they will stand, but it is best to err on the safe side. In the case of Pears, after they have become about ripe, the flavour will be improved by their being placed for a few hours in a warmer place. There is nothing "fantastic" in the idea. Such fruit will not keep long afterwards.

Various (*Vicar*).—To strike cuttings, raise seeds of tender plants, and grow Melons and Cucumbers, you ought to be able to command a bottom heat of from 75° to 85°, and a top heat of from 65° to 70°. With a higher temperature, what you gain in time you will generally lose in robustness. We are not calculating on sun heat, when, if the sun is bright and a little air is given early, there may be a gradual rise of from 5° to 15°. For the house referred to—5 feet wide, 7 feet high at back, and 5 feet 9 inches in front—two 4-inch pipes will do for bottom heat, but you will need as much for top heat. In a partly-sunk similar house we have two 3-inch pipes below, and two above, but they are not enough in cold weather without covering. The damp that is troubling you in the new pits, heated by two 3-inch pipes in a chamber below, with a platform of boards, on which the plants stand near the glass, may be owing to the damp remaining in the new walls, to a damp floor in the chamber beneath, to using rather too much water, and to letting it go from the boards to the floor to be raised again by evaporation. The simplest remedy would be to use more heat in the pipes during the day, and give more air in consequence, and in mild weather tilting the sash a little in front as well as at the back. In frosty weather a very small quantity of air at the back will prevent the condensation of moisture on the glass, and thus prevent the moisture falling on the plants. In cold weather a covering on the outside of the glass at night would also remedy the evil. As palliatives, if the floor beneath the flue is wet, remove the wettest, and cover with very dry ashes, better still with lime slacked, and not too fresh. On the boards themselves place a thin layer of dry ashes, and give no more water than is absolutely necessary; and, until you get rid of the damp, lift the pots out that need watering, and replace after the extra moisture has drained away. Most likely some of these hints may be useful, but in a pit kept at from 40° to 45°, the simplest remedy would be more heat and air during the day, and less heat at night.

Names of Fruit (*W. H. S.*).—1, Beurré Diel; 2, Greenup's Pippin; 3, Ravelston Pippin; 4, Hunthouse. (*T. R.*).—1, Winter Franc Réal; 2, Spanish Bon Chrétien; 3, Uvedale's St. Germain; 4, Flemish Bon Chrétien. We do not know the other Apples.

POULTRY, BEE, AND PIGEON CHRONICLE.

THE POULTRY LORE OF 1870.

We are thankful that we have been spared another year to review the past as regards poultry, and truly grateful in these days of war and bloodshed that we have to do only with things of peace.

Although poultry plays but a small part, and enters for little in the food of a people, yet it is not without its importance, and if it were developed to the full scope of which it is capable, it would assume an importance which is hardly deemed possible. The contempt for cookery that makes a pound of meat in England do less for the support of a family than half the quantity does in France, and the Britannic craving for roasted and boiled masses, banish poultry from many tables where it might often appear as a *bonne bouche;* and the two chickens that now serve meagrely to dine three of a family of eight, would form the foundation of a savoury and wholesome dish sufficient to dine all. In the course of our remarks we shall have to note a wonderful increase in many breeds, but we shall never get them large enough to supersede the leg of mutton or the sirloin. Our purpose would be fully answered if we could by any labour or remarks of ours introduce them to tables where they are now only seen on very rare occasions, as weddings, christenings, and the like.

We have no increase to note in Dorkings; indeed, we do not see how it is possible we should have. They have almost attained their limit. Cocks of 12 lbs. and hens of from 8 to 10, would almost justify us in thinking the breeders of these birds have been trying to qualify them for becoming joints. We have been glad to see many new names among the prize-takers, and this not to the exclusion of time-honoured exhibitors, but as recipients of the extra prizes called for by the numbers of entries.

There is no progress to call for special mention among the Spanish. They are not so numerous as they were some years since; and although, taken as a class, they are of superior average merit, yet we do not think the most distinguished among them are equal to those that held the same high rank ten years ago. We should be sorry to see them decline. They have a rare merit, inasmuch as they may be kept in health where others would die, and their plumage enables them to live in towns without losing beauty.

Our old friends the Cochin-Chinas hold their own: Buff and Cinnamon, Grouse and Partridge, and the White. We have had most excellent birds of all these commonly shown in 1870. If we were asked to name the colour in which there has been most progress, we should be disposed to give the palm to the Grouse. They have been largely exhibited at all the leading shows, but are seldom found at the purely agricultural meetings. They are kept by dwellers in towns, and at the suburban villas, but they find no favour with the farming interest.

Brahmas now form one of the largest classes, so large, indeed, that it has been necessary to divide them; and instead of the one or two pens of Light birds seeming out of place among their Dark brethren, they form a large item in every show. There has been wonderful progress in these birds; immense weight and perfect plumage are attained. Those who are familiar with our ideas know we are not lovers of crosses; but if any cross is useful, we believe it is one between the Dorkings and Brahmas. The latter take somewhat from the delicacy of the flesh of the former, but make ample amends by the strength of constitution they infuse.

We have been very pleased to see an increase in the entries

of Polands, the birds composing them being of high merit. They are great ornaments to a show.

The Hamburghs in their different classes have sustained their old reputation. The Capulets and Montagues of the Spangled, represented in the feuds of hen tails and full tails, have ceased the wordy war of bygone days and adnoted the decisions of judges; a hen tail is now never seen. The pencilling of the Golden is very superior to that of the Silver, and a desideratum appears accomplished, inasmuch as in many pens we have seen the tails as well pencilled as any other part of the body. We think the Golden birds of both breeds have been shown as nearly perfection as is possible, and certainly superior to the Silver. The recent introduction of classes for Black birds of this breed has added a beautiful variety to our exhibitions. The glossy black plumage, the bright red comb, and the pure white deaf ear, form a striking contrast.

Black and Brown Red Game run a neck-and-neck race. When looking at the Black we award them the palm, but when we come to the Browns we reverse our decision. It is certain both are nearly perfect. Old cockers sometimes grumble, and say "the birds of the present day are too leggy." The other Game classes make little progress, and we are sorry to see a falling-off in the Duckwings. We know no more beautiful bird in our eyes than the Duckwing Game cock.

But very few years since the French breeds showed an occasional pen in the Variety class. Then there were two; then more; and at last an experiment was tried by offering prizes for any French breeds; then they were divided, and now the Crêve-Cœurs and Houdans form large classes. The La Flèche have been failures. Those who appreciate large eggs and plenty of them, will like the Crêve-Cœurs; those who care not so much for large eggs, but want hardy fowls, will like the Houdans. We can say little in favour of the La Flèche; they are good for the table, they lay large eggs, but they lack constitution, or the climate here is unsuitable to them; they are well in the morning, and at night, without any visible reason, they are at death's door.

Malays, once so popular, have now few admirers, if we may judge from their entries. The beautiful Sebrights seem losing ground. Some one should step in to the rescue; they are far too beautiful to be allowed to lose merit, and, being a composite breed, they go back if not renewed from time to time. The Blacks and Whites are hardly shown so good as they used to be. The Game have irresistible charms for Bantam-breeders. They are bred to high perfection, and their entries are sufficiently numerous to justify an increase in the number of prizes offered for them. The quaint Japanese Bantam is exhibited in considerable numbers. They are familiar little creatures, and from their attachment to man, would seem to be among fowls like the Robin among birds. While speaking of Bantams, it would be unjust not to mention the beautiful Buff Cochin Bantams that have been seen at some of the shows during the past year.

In every way the Aylesbury Ducks have quailed before the Rouens; their numbers have been fewer, and their weights less. The Rouens now form the largest class. The Black Buenos Ayreans have shown well, but will still bear reducing in size. A pair of Mandarins or Carolinas caused a sensation a few years since, but they are now shown by dozens.

Geese go on increasing. The Whites hold their own in weight, but the Toulouse are far more numerous. In both classes birds of 28 lbs. each are required for first-prizetakers—no mean success, when we consider that a few years ago 9 lbs. were the average, and 14 lbs. a marvel. Turkey cocks have been shown 30 lbs. in weight, young birds of the year more than 20, and young hens of 15 lbs. each.

These are some of the results of careful breeding, and they are not mean ones. When we are sufficiently advanced to have correct statistics of poultry sold for food, those who now speak lightly of it will alter their opinions. It may safely be said that of late years, since the poultry movement took place, fowls, Geese, Turkeys, and Ducks have increased nearly a third in weight. If we could ascertain the numbers that are sent to market, and thereby publish the extra amount of food produced only by choosing the breeds adapted to the places where they are to be kept, and by proper and judicious feeding, it would astonish many, by showing the enormous increase in the delicate food for which we are indebted to the poultry-yard.

The progress has not been confined to this one part of the question. In the early days roup was the bane of the breeder. Two or three days' confinement, a fortnight's damp cold weather, or a prevalence of east wind caused it to appear. Birds were bred in-and-in, they were little cared for, and they took their revenge by their proneness to catch any disorder from which a few of the yard were suffering. At shows a good part of a class was often removed because the fowls composing the pens were diseased. It was never safe to turn down fowls that had been to a show till they had performed quarantine. Now show after show may be visited without seeing a diseased bird. It is not only at shows this is observed, but its happy effect is seen in every yard and run. The result has been attained without expense. It is the reward of more careful breeding and of some painstaking. Those who are close observers have seen with much interest the ease with which the requirements of judges have been carried out. The hen-tailed cocks of Hamburghs, the combs and gills of Polands, the drooping combs of Spanish, and many other such defects are now never met with.

When we come to the question of eggs we again lament the want of statistics. Hundreds of millions are consumed every year, many of them imported. Notwithstanding the war, the number of eggs, more than 22 millions, imported from France last November, was about the same number as imported in that month of 1869. In every way the production of eggs is too little cared for in England.

We have concluded our poultry lore, but gratitude compels us to say a few words of ourselves. We profess, as poultry chroniclers, to hold an impartial balance on all matters connected with the subject. We deprecate anything like personality, and while we give an outspoken opinion on every question that comes before us, we can safely say we never knowingly print a line that shall cause pain. We have our reward in an increased and increasing circulation, and in the confidence of our readers. We thank them for it. We pledge ourselves to continue a line of conduct consonant at once with our feelings, and productive of our readers' approval. We thank our subscribers, readers, and contributors, and we heartily wish them all

A Happy and Prosperous New Year.

THE ANY VARIETY CLASS.

I quite concur with the remarks of "Y. B. A. Z.," and think that the "Any other variety" classes should have awarded not less than six prizes to them, as such classes generally bring together many varieties of fowls that are seldom seen, and birds of superior merit. When four and even six varieties are brought together, how can a judge do justice to the whole if only two or three prizes are given?

"Y. B. A. Z." says that Malays ought to have a class to themselves at all established shows, and so I think, as it is not fair to see Malays classed against Black Hamburghs, Saltans, and Polands. At the Durham Show a pen of Malays was not even commended, and this pen had taken honours at Birmingham three times. The first prize went to Black Hamburghs; the second to a pen of Malays—a pen, I understand, which gained prizes at Birmingham and the Crystal Palace.—R. D.

CARBOLIC ACID AND INSECT VERMIN.

The *Canadian Poultry Chronicle* for December contains the following valuable remarks on this subject, which I know will be useful to many readers here:—

"All amateurs and poultry-breeders are but too well aware that parasites are the pests of poultry houses, more especially in towns and cities, where poultry are kept within confined limits. Without, as the owner thinks, any real cause, the fowls begin to droop and look sickly, and, after a little, one by one die off. He then becomes alarmed; examines them, and finds them covered with parasites; he looks into his fowl house and examines the cracks and chinks in the boards, and finds them filled with insects, living insects. He is astonished; he cannot account for it; and then the question arises in his mind, 'How can I get rid of them?' Scores of times within the last few months has this question been asked of us, and our answer invariably has been, Use carbolic acid.

"But how to use it is a matter of importance. There can be no doubt about its efficacy, but it becomes everyone to exercise care in handling it. The acid is sold by all druggists in its crystalline and liquid form. In crystals, it dissolves in twenty times its weight of water—that is, 1 oz. of the crystals requires 20 ozs. of water to dissolve them. Thus dissolved, it is entirely too strong for any ordinary use. Dr. Emerson gives recipes for preparing this powder for disinfecting and other purposes.

As a whitewash for walls, for protection against insects, bugs, &c., he says, 'Put 3 ozs. of carbolic acid into 12 quarts of lime-water or whitewash.' Whitewash the walls of the poultry house well with this wash, and no more living parasites will be seen; their death is inevitable. A weak solution may be made to wash fowls in: one part of the acid to sixty parts of warm water; let it cool, then dip the fowls in it until the feathers become thoroughly wet and the solution reaches all parts of the body. Afterwards place the fowls on clean dry straw, where the sun will reach them, until they are dry."

I may add to the foregoing that the most handy and useful thing I know of to have about the poultry yard is carbolate of lime. It is a powerful and at the same time pleasant disinfectant, whilst it will also answer most purposes in the way of destroying insects, if dusted liberally against the walls or other infested parts. Being a powder, it may also be dusted amongst the straw in the nests, and in other places where a liquid cannot be used; though in very bad cases the more searching wash above given will be necessary. The price in most towns is about 4*d.* per pound, and a regular sprinkling on the floors of the houses, I can say from experience, adds greatly to the comfort of all concerned.—L. Wright.

EXHIBITION GAME COCKS.

I most fully concur in the remarks on Game fowls in your last number by your correspondent "Yorkshire." Some of the specimens of the Brown Reds shown at many exhibitions really put one in mind, so to speak, of a cross between "a Malay and an Ostrich," if such a cross were possible. The brassy or straw-coloured Brown Reds, especially, that I have seen at exhibitions, were very poor things as Game cocks, standing in their pens, with tails carried horizontally, and hiding their heads in the farthest corners of the pen without crowing at all. I have, however, seen some excellent cockers' birds of this colour, called in some places brass cocks. Those birds I allude to were bred from good dark-legged Brown Red cocks put to good yellow-legged Duckwing hens, and were great favourites and very quick birds. Our judges of Game fowls certainly keep up the wrong type, in the exhibition Brown Reds more especially, though I do not like a full-feathered bird resembling a farmyard Game cock.—Newmarket.

BRISTOL AND CLIFTON POULTRY SHOW.

The total entries for this Show, the judging of which takes place to-day, are 1306, which, by an extraordinary coincidence, are just one more than last year. From information which has reached us we are able to say that in many of the classes there will be the best show of the season. Partly in consequence of the retarding influence of the dry season many of the finest chickens have not been previously ready for exhibition, and in nearly all the classes there are entries, from eminent exhibitors, of first-rate birds never before shown.

The Spanish as usual are in great force, the cockerels numbering thirty-three and the pullets twenty-three entries. We hear, also, that a better show of Buff Cochins than has yet been seen this year is anticipated. But the most remarkable classes will be the Dark Brahmas, which in numbers have beaten every other breed. The cockerel class contains the extraordinary number of forty-five entries, and the others are in proportion.

With the exception of Bantams and Pigeons, the pens at this Show will be, as usual, arranged in single tier, while for light the exhibition hall has perhaps no equal. Altogether, both to the experienced and the tyro, this Show will offer opportunities and advantages for the real study of their pet hobbies which have not previously offered during the present season, and which none who can enjoy should lose sight of.

THE FLYING OR SKY TUMBLER.

Two peculiarities are omitted in the description of this class of Tumbler in your Journal of December 29th, and which the Birmingham Columbarian Society will accept, perhaps, from an amateur. I refer to the occurrence of clear-legged and odd-eyed birds (a hazel and a pearl eye), in the Birmingham Muffed Tumbler broods from parent birds both muffed in legs, and with pearl or silver eyes, and *vice versâ*—*i.e.*, muffed-legged and silver-eyed brood from clear-legged and odd-eyed parentage. So it occurs in my own flight of about a score of these muffed Tumblers had from Birmingham, and I presume the occurrence is not an exception.

Allusion is made, in the description I mention, to a Dutch import of this variety of Tumbler, and, I think, very appropriately; for doubtless the Birmingham Roller or Tumbler is a cross between our own old English and the European Dutch or German feather-legged Tumbler, "improved upon," certainly, by English blood. Hence the occasional clear leg appears; the odd eyes dating back, however, I cannot guess whence, save of hazel-eyed, Bald, or Magpie ancestry. Can the Birmingham Columbarian Society inform us further upon the features I have noticed?

As additional testimony to the cross suggested, the Birmingham Tumblers derive, I infer, their high or sky-flying propensity from our English blood, and their rolling properties from the continental admixture.

What "Young England" fancies is our own dainty, fairy little Sky Tumbler, innocent of feathered legs, red as coral, with eyes of transparent pearl and studded jet, and in all colours, from those of the harlequin Almond, ermine Mottle, and varied Splash, to the sombre selfs—red, black, yellow, silver, drab, and blue—birds not heavier than a Starling, and whose home appears to be in cloudland or on the roof alike, as caprice or nature prompts.—Reader.

INQUIRY.

I advertised in your Journal some Call Ducks, and amongst other applications received one from W. George & Co., poultry merchants, 42, Great Wild Street, Covent Garden, for four pairs, and another from George White, 147, Culford Road, N., for six couple. I replied, giving a reference to a tradesman in London, and requesting post-office order before forwarding the birds. I have heard nothing further. Does any reader of this Journal know them?—J. N. Preston.

MANCHESTER POULTRY AND PIGEON SHOW.

(*From two Correspondents.*)

The tenth and most successful poultry and Pigeon Show ever held in Manchester took place on the 30th and 31st of December. On both days the attendance of visitors was very great, and, to some extent, will recoup the spirited proprietors for the loss they must have sustained last year, when, if we remember aright, it rained nearly all the time of the Show. The arrangements were excellent, and if any fault could be found, we thought it would have been much better, both for the poultry and Pigeons, had the magnificent rooms been better heated.

Old Coloured *Dorking* cocks were rather a poor class, nearly all bad in feet or toes, yet there were several very large birds amongst them. The hens were very good in quality, but not numerous. The cockerels were a very good class, which was well filled. The class for Coloured pullets consisted of a remarkably good lot of birds. Silver-Grey Dorkings were not good. All the *Spanish* classes were very good, but many of the birds showed signs of suffering from the severe weather; in fact, a few were so affected with the frost, that they would have been far better at home. The first-prize hens were claimed at £15 immediately the Show opened. The *Cochin* classes were all remarkably fine, though some really good birds appeared quite out of condition from being over-exhibited. The first-prize pair of Buff pullets were in beautiful condition. The Dark *Brahmas* were both remarkably good classes, but, as in the Cochins, a few of the best birds were in bad condition. Light Brahmas were not good. *Poland* cocks were excellent, and a few of the hens were as good as could be wished for. The *Game* classes were the best by far in quality I have seen this season. All the classes were remarkably good and well filled.

Ducks, *Geese*, and *Turkeys*, as may be seen by the prize list, were wonderful.

In *Hamburghs* the Spangled were good, and very far better than the Pencilled. *Bantams* were worth a long journey to see, and no class in the Show was more crowded than the Game Bantams.

PIGEONS.

In the Pouter classes, unfortunately for Mr. Gamon, of Chester, his four fine birds were entered in wrong classes, otherwise we feel sure some of them would have been in the prize list; and, again, a pair of his splendid Yellow Dragoons were passed over, owing to the hen bird being marked, she having a piece of string tied round one of her legs.

There were 307 entries of Pigeons, and representatives from most of our best lofts. Many pairs of Pigeons arrived too late for competition, we believe the whole of those belonging to Mr. Van Haansbergen and Mr. Sharp, of Johnstone. The judgment appeared to give almost universal satisfaction, and we never heard fewer complaints, although a few unsuccessful exhibitors, as usual, attempted to convince novices their unnoticed pens were better than the best.

The Pouters were good; Black Carrier cocks excellent, numbering fourteen pens, the winning birds being placed the same as at Birmingham Show. Black Carrier hens were very good. Had pen 1043 been

owned by an artist, it would have taken the first prize. Dun cocks we thought were a poor lot, but the hens made up for them; what should have been Blue Carriers were mostly slate-coloured, but they are improving. The Yellow Dragoons were all good, the first prize being won by, we are told, the same pair that took the silver cups at the Crystal Palace and Bingley Shows. In "Any other Coloured Dragoons," the most magnificent pair of Reds we have seen for many years deservedly were first. We were informed they were bred by the London fancier who bred the first-prize Yellows. Blues were second. All the birds in the class were good, and very properly highly commended.

There were twenty-eight entries of Antwerps, but neither Judges nor exhibitors appear to know what they want. The first prize went to a pair of hard-coloured, useful-looking Blue-chequered, and were claimed for £5; the second-prize birds were Mealy-ash. Jacobins, excepting those which took the first prize, were only moderate. The second-prize pair we took for two cocks. What has become of all the good Jacobin fanciers? Mr. Firth was first and second in Barbs with, perhaps, two of the best pairs in England, the first-prize cock being a wonder.

There was a lot of good Blue (or should-be Blue) and also White Fantails, but many of the Whites appeared to be suffering from overshowing. Almond Tumblers were very good, also the Beards, Balds, and Any variety of Tumblers. The Nuns, the poor Nuns! the whole class were disqualified for over-trimming; it is but just to Mr. Graham and Mr. Haansbergen to say that they were not included, their birds not being sent, or had not arrived. The two prize pairs of Magpies were charming. Turbits were also very good, particularly the first-prize pair; but here, again, pens 1221 and 1224 were disqualified for being so badly oiled.

Swallows and Archangels were fair. English Owls were very good, and many pens reminded us of the time when foreign ones were not known at our shows. The improvement in this breed has been very marked the last few years. The foreign Owls were very good. The first-prize Runts weighed 4 lbs. 12 ozs.

The whole class of Trumpeters was splendid; first Black, second a beautiful pair of Whites. The birds in the Any variety class were all pretty. We very much admired a pair of Dutch Pouters shown by Mr. Tegetmeier.

Dorkings (Coloured, except Silver-Grey). — *Cock.* — 1, J. White, Warlaby. 2, D. Parsons, Cuerden, Preston. 3, Admiral W. Hornby, Knowsley. *hc*, R. D. Holt, Orrest Head, Windermere. *c*, Mrs. F. S. Arkwright, Sutton Scarsdale, Chesterfield; S. H. Stott, Quarry Hill, Rochdale.

Dorkings (Coloured, except Silver-Grey).—*Hens.*—1, Mrs. F. S. Arkwright. 2, J. White. 3, Admiral W. Hornby. *hc*, T. Briden, Earby, Skipton; Hon. H. W. Fitzwilliam, Wentworth Woodhouse; Henry Lingwood, Barking, Needham Market; W. W. Ruttlidge, Shortend, Kendal.

Dorkings (Coloured, except Silver-Grey).—*Cockerel.*—1, Mrs. E. Wheatley, Ingatestone. 2, Mrs. T. W. L. Hind, Kendal. 3, H. Pickles, jun., Earby. *hc*, T Briden; Miss Davies, Chester (2); R. D. Holt; J. Longland, Grendon, Northampton; Rev. F. Taylor, Kirkandrews Rectory, Longton; J. White (2). *c*, Mrs. F. S. Arkwright; H. Lingwood, Barking, Needham Market.

Dorkings (Coloured, except Silver-Grey).—*Pullets.*—1, Mrs. E. Wheatley. 2, Mrs. F. S. Arkwright. 3, W. H. King, Sandfield, Rochdale. *hc*, Rev. E. Bartrum, Great Berkhamustead; Mrs. F. S. Arkwright: Miss Davies; Miss Fairhurst, Ormskirk; T. L. Jackson, Bash of Ewes, Langholm; J. Longland W. Harvey, Sheffield.

Dorkings (Silver-Grey).—*Cock.*—1, T. L. Jackson. 2, Hon. H. W. Fitzwilliam. 3, Hon. J. Massey, Limerick.

Dorkings (Silver-Grey).—*Hens or Pullets.*—1, R. D. Holt. 2, J. Longland. 3, W. W. Ruttlidge. *hc*, T. L. Jackson; R. Smalley, Lancaster. *c*, Rev. J. F. Newton.

Dorkings (Rose-combed or Any other variety).—1, Miss Fairhurst. 2, D. Parsons. 3, Miss E. Williams, Henllys Berriew. *c*, Countess of Aylesford, Leamington Spa.

Spanish.—*Cock.*—1, H. Lane, Bristol. 2, C. W. Brierley, Middleton. *hc*, Burch & Boulter, Sheffield; Hon. Miss D. Pennant, Penrhyn Castle, Bangor (2). *c*, J. Thresh; R. Teebay, Fulwood, Preston.

Spanish.—*Hens.*—1, R. Teebay. 2, H. Lane. 3, J. Thresh, Bradford. *hc*, Miss E. Beldon, Goitstock, Bingley; Burch & Boulter; F. & C. Haworth, Newfield, Haslingden. *c*, Hon. Miss D. Pennant.

Spanish.—*Cockerel.*—1, C. W. Brierley. 2, Hon. Miss D. Pennant. 3, H. Lane. *hc*, W. R. Ball; R. Davis; F. & C. Haworth; Hon. Miss D. Pennant; J. Thresh; C. W. Brierley. *c*, Burch & Boulter; J. Mansell, Longton, Staffordshire.

Spanish.—*Pullets.*—1, W. R. Ball. 2, Hon. Miss D. Pennant. 3, R. Teebay. *hc*, H. Lane; J. Thresh.

Cochin-China (Cinnamon and Buff).—*Cock.*—1, H. Yardley, Birmingham. 2, E. Thomas, Barlow Moor, Didsbury. 3, T. Stretch, Ormskirk. *hc*, W. A. Burnell, Southwell (2); W. A. Taylor, Manchester; R. White. *c*, N. Dawson, Beverley; W. Sandy.

Cochin-China (Cinnamon and Buff).—*Hens.*—1, W. A. Burnell. 2, W. A. Taylor. 3, W. Sandy, Ratcliffe-on-Trent. *hc*, C. Felton, Birmingham.

Cochin-China (Cinnamon and Buff).—*Pullets.*—1, J. Sichel, Timperley. 2, Henry Lingwood. *hc*, T. Bracegirdle, Sale, Manchester; Henry Lingwood, Barking, Needham Market; T. Stretch; W. Sandy.

Cochin-China (Brown and Partridge-feathered).—*Cock.*—1, T. Stretch. 2, E. Leech, Rochdale. 3, E. Tudman, Whitchurch, Salop. *hc*, Mrs. R. White, Sheffield; J. A. Taylor. *c*, Furness & Sudall, Haslingden.

Cochin-China (Brown and Partridge-feathered) - *Hens.*—1, J. A. Taylor, Manchester. 2, E. B. Wood, Uttoxeter. *hc*, T. Stretch; E. Tudman.

Cochin-China (Brown and Partridge-feathered).—*Pullets.*—1, J. A. Taylor. 2 and 3, H. Crossley, Broomfield, Halifax. *hc*, T. Stretch; P. H. Jones, Fulham. *c*, Horace Lingwood, Creeting; J. Palmer.

Cochin-China (White).—*Cock.*—1, R. Smalley. 2, J. Sichel. *hc*, H. Yardley.

Cochin-China (White).—*Hens or Pullets.*—1, R. Smalley. 2, J. Sichel. *c*, F. and C. Haworth.

Brahma Pootra (Dark).—*Cock.*—1, Hon. Mrs. A. B. Hamilton, Woburn. 2, J. H. Dawes, Birmingham. 3, J. S. Tainton, Gloucester. *hc*, W. Hargreaves, Bacup; Horace Lingwood; Hon. Miss D. Pennant (2); W. Whiteley, Sheffield. *c*, T. F. Ansdell, St. Helen's; J. H. Dawes.

Brahma Pootra (Dark).—*Hens or Pullets.*—1, E. Leech. 2, H. Lacy, Hebden Bridge. 3, Mrs. A. Hurt, Alderwasley. *hc*, T. F. Ansdell; Mrs. A. Hurt; H. B. Morrell, Caemawr, Clyro; Hon. Miss D. Pennant; E. Ryder, Hyde; J. Sichel; J. Watts, King's Heath, Birmingham; W. Whiteley. *c*, H. P. Moor, Chippenham; H. B. Morrell (2); W. Whiteley.

Brahma Pootra (Light).—*Cock.*—1, W. T. Storer, Brewood, Stafford. 2, A. O. Worthington, Burton-on-Trent. 3, F. Crook, Forest Hill. *hc*, J. Pares, Postford, Guildford. *c*, H. Dowsett, Pleshey, Chelmsford.

Brahma Pootra (Light).—*Hens or Pullets.*—1, J. R. Rodbard, Wrington, Bristol. 2, F. Crook. 3, A. O. Worthington. *hc*, H. Dowsett; J. Pares; W. Whiteley.

Polands (Any variety).—*Cock.*—1 and 3, G. C. Adkins, Lightwoods, Birmingham. 2, W. Harvey. *hc*, Miss E. Beldon; W. Gamon, Chester; J. S. Senior; P. H. Jones.

Polands (Any variety).—*Hens or Pullets.*—1, G. C. Adkins. 2, Miss E. Beldon. 3, T. Wakefield, Golborne, Newton-le-Willows. *hc*, W. Harvey.

Crève-Cœur.—1, W. O. Quibell, Newark. 2 and *c*, C. H. Smith, Ratcliffe-on-Trent. 3, Miss E. Beldon. *hc*, W. Bonteher, Notting Hill

Houdans.—1, R. B. Wood. 2, W. O. Quibell. 3, J. Sichel.

Game (Black-breasted Reds).—*Cock.*—1, S. Beighton, Farnsfield, Southwell. 2, E. C. Gilbert, Penkridge. 3, T. Mason, Green Ayre, Lancaster. *hc*, C. Chaloner, Whitwell, Chesterfield; W. H. Stagg, Netheravon, Marlborough. *c*, J. Frith.

Game (Black-breasted Reds).—*Hens.*—1, C. Chaloner. 2, J. Douglas, Clumber. 3, J. Forsyth, Wolverhampton. *hc*, P. P. Lyon, Knotty Ash, Liverpool. *c*, G. Bagnall, Draycott, Cheadle.

Game (Black-breasted Reds).—*Cockerel.*—1, S. Beighton. 2, J. Douglas. 3, W. Boyes, Beverley. *hc*, E. Bell; C. Chaloner; G. Bagnall; J. Mason; W. H. Stagg. *c*, J. Frith, Chatsworth

Game (Black-breasted Reds).—*Pullet.*—1, W. Dunning, Newport, Salop. 2, J. Holland, Manchester. 3, W. J. Pope, Biggleswade. *hc*, T. Bottomley, Shelf, Halifax; C. Chaloner; D. Harley, Edinburgh; E. Mann, Wallfield Stand, Manchester; W. J. Pope; G. Bagnall. *c*, J. Mashiter, Ulverstone; C. W. Brierley.

Game (Brown and other Reds, except Black-breasted).—*Cock*—1, J. Bowness, Newchurch. 2, C. W. Brierley. 3, J. Wood, Wigan. *hc*, A. Haslam, Hindley, Wigan; Golley & Willet, Nantwich.

Game (Brown and other Reds, except Black-breasted).—*Hen.*—1, C. W. Brierley. 2, J. Wood. 3, F. Sales, Crowle. *hc*, B. Conaterdine, Littleborough; C. W. Brierley.

Game (Brown and other Reds, except Black-breasted).—*Cockerel.*—1, J. Wood. 2, W. Dunning. 3, S. Matthew Stowmarket. *hc*, W. Grice, Bootle; E. Mann (2); W. Sowerbutts, Nantwich; C. W. Brierley; Golley & Willett. *c*, J. Mashiter; T. Statter, Stand, Manchester.

Game (Brown and other Reds, except Black-breasted).—*Pullet.*—1 and 3, C. W. Brierley. 2, W. Boulton, Dalton-in-Furness. *hc*, T. Burgess, Barleydam; J. Mashiter; S. Matthew; W. Sowerbutts. *c*, T. Statter; J. Bowness.

Game (Duckwings, and other Greys and Blues).—*Cock.*—1, J. Halsall. 2, C. Chaloner. 3, S. Matthew. *hc*, C. W. Brierley; W. Boyes. *c*, J. Frith.

Game (Duckwings, and other Greys and Blues).—*Cockerel.*—1, S. Matthew. 2, C. Travice, Thurgoland, Sheffield. 3, J. Frith. *hc*, W. Dunning.

Game (Duckwings, and other Greys and Blues).—*Hen or Pullet.*—1, F. Sales. 2, E. Bell, Burton-on-Trent. *hc*, D. Harley; C. W. Brierley.

Game (Any other variety).—*Cock.*—1 and 2, J. Sunderland, Halifax. *c*, W. Church, Nantwich.

Game (Any other variety).—*Hen.*—1, C. W. Brierley. 2, J. Frith. *hc*, C. W. Brierley; R. & H. Walker, Gomersall. *c*, W. Johnson, Stanley, Liverpool.

Ducks (Rouen).—*Drake.*—1 and 2, T. Statter. 3, C. P. Ackers, Abram, Wigan. *hc*, T. Burns, Abram, Wigan (3); Miss Davies (3); W. Evans, Prescot; W. Gamon; S. H Stott; T. Taylor, Kendal.

Ducks (Ronen).—*Ducks.*—1, J. K. Fowler, Aylesbury. 2, T. Statter. 3, C. P. Ackers. *hc*, T. Burns; W. Evans; S. H. Stott; H. B. Smith, Broughton, Preston; T. Statter; J. Wood; T. Wakefield.

Ducks (White Aylesbury).—1, E. Leech. 2, Mrs. M. Seamons, Hartwell, Aylesbury. 3, J. K. Fowler. *hc*, Mrs. M. Seamons; E. Leech.

Ducks (Black East Indian).—1, S. Burn, Whitby. 2, Rev. W. Serjeantson, Acton Burnell. *hc*, S. Burn. *c*, H. B. Smith.

Ornamental Waterfowl.—1 and 2, J. Jennison & Co., Zoological Gardens, Manchester (2) (Vidnata Whistling Ducks and Carolinas). 3, T. Haslam (Shovellers). *hc*, C. N. Baker, Chelsea; R. B. Smith (2) (Shield and Carolinas); C. W. Brierley; M. Leno, Markyate Street (Mandarins); J. Goodwin, West Gorton (Mandarins); J. Jennison & Co. (3) (Mandarins, Teal, and Tufted Divers). *c*, C. N. Baker (2); J. Knott, Kirmanshulme, Manchester (Pochards); M. Leno (Carolinas); T. Haslam (Brown Chinese Geese).

Geese (White).—*Gander.*—1 and 2, E. Leech (30 lb. 9 ozs. and 30 lbs. 1 oz.). 3, Rev. G. Hustler, Stillingfleet Vicarage, York (29 lbs. 10 ozs.). *hc*, T. Statter, jun. (2).

Geese (White).—*Geese.*—1, E. Leech (37 lb. 4 oz.) 2, Rev. G. Hustler (49 lb. 14 oz.). 3, J. & W. Rostron, Levenshulme, Manchester (46 lb). *hc*, T. Statter, jun.

Geese (Grey and Mottled).—*Gander.*—1, Mrs. M. Seamons (33 lb. 6 oz.). 2, J. K. Fowler (32 lb.). 3, E. Leech (29 lb. 4 oz.). *hc*, J. Lycett, Stafford; E. Leech.

Geese (Grey and Mottled).—*Geese.*—1, W. Tippler, Chelmsford (41 lb.). 2, E. Leech (41 lb). 3, H. Crossley (39 lb.). *hc*, J. Lycett; Rev. G. Hustler.

Turkeys.—*Cock.*—1, F. Lythall, Banbury (34 lb. 15 ozs.). 2 and 3, E. Leech (32 lb. 7 oz. and 32 lb. 6 oz.) *hc*, J. Kershaw, Heywood, Manchester; G. R. Pearson, Witham Common, Grantham; Rev. N. J. Ridley, Newbury.

Turkeys.—*Hens.*—1, E. Leech (37 lb. 2 oz.). 2, F. E. Rawson, Thorpe, Halifax (36 lb. 11 oz.). 3, Rev. N. J. Ridley (29 lb. 14 oz.). *hc*, Mrs. J. Mayhew, Great Baddow; E. Leech; G. R. Pearson.

Extra Stock (Any variety).—1, Furness & Sudall (Cuckoo Cochins). 2, Hon. H. W. Fitzwilliam, Wentworth Woodhouse (La Flèche). *hc*, W. A. Hyde, Ashton-under-Lyne (Japanese Silkies); J. Kitchen, Penistowles, Blackburn (Anconas); Mrs. R. Taafe, Plunket, Ireland (Black Cochins).

Hamburghs (Black).—*Cock.*—1, T. Walker, jun. 2, Rev. W. Serjeantson. 3, Stuttard & Heyes, Accrington. *hc*, J. A. Taylor. *c*, Mason & Walker, Denton, Manchester; Rev. W. Serjeantson.

Hamburghs (Black).—*Hens or Pullets.*—1 and 3, T. Walker, jun, Denton. 2, G. Lingard, jun. *hc*, H. Beldon, Goitstock, Bingley; E. Brierley; J. Lancashire, Chadderton; N. Marlor; Mason & Walker; Rev. W. Serjeantson.

Hamburghs (Golden-spangled).—*Cock.*—1 and 2, J. Buckley, Taunton, Ashton-under-Lyne. 3, J. Ogden, Hollinwood. *c*, H. Pickles, jun.; Miss C. E. Palmer, Lightborn, Warwick; Duke of Sutherland, Trentham.

Hamburghs (Golden-spangled).—*Hens or Pullets.*—1, Chadderton & Scholes. 2, J. Ogden. 3, N. Marlor, Denton. *hc*, J. Buckley; W. McMellon, West Glossop; J. Ogden.

Hamburghs (Silver-spangled).—*Cock.*—1, Ashton & Booth, Mottram. 2, H. Beldon. 3, Miss E. Browne, Chardleigh Green, Chard. *hc*, Ashton & Booth; J. Fielding, Newchurch; J. Howe, Denton.

Hamburghs (Silver-spangled).—*Hens or Pullets.*—1, Ashton & Booth. 2, H. Beldon. 3, J. Fielding. *hc*, J. Howe; J. Lancashire; D. Lord, Stacksteads, Manchester; W. McMellon.

Hamburghs (Golden-pencilled).—*Cock.*—1, Duke of Sutherland. 2, Burch and Boulter. 3, H. Beldon. *hc*, S. Burn; W. Schofield, Heywood, Manchester; T. Wrigley, jun., Tonge, Middleton.

Hamburghs (Golden-pencilled).—*Hens or Pullets.*—1, Burch & Boulter. 2, T. Wrigley, jun. *hc*, H. Beldon; H. Pickles, jun.

Hamburghs (Silver-pencilled).—*Cock.*—1, H. Beldon. 2, Duke of Sutherland. *c*, F. & C. Haworth; H. Pickles, jun.

Hamburghs (Silver-pencilled).—*Hens or Pullets.*—1, H. Pickles, jun. 2, Duke of Sutherland.

Game Bantams (Black-breasted Reds).—*Cock.*—1, J. Blamires, Great Horton. 2, T. Sharples. 3, J. Bamber, Accrington. 4, Williams & Straw, Farnsfield, Southwell. *hc*, J. Blamires; H. J. Edge, Basford, Notts; G. Hall, Kendal; E. Hudson, Ulverston (2); T. C. & E. Newbitt; Stuttard & Heyes; T. Sharples, Rawtenstall; W. Adams, Ipswich. *c*, J. Howe; R. Swift, Southwell.

Game Bantams (Black-breasted Reds).—*Hens or Pullets.*—1, G. Daft, jun., Hallboughton, Southwell. 2, J. W. Morris, Rochdale. 3, T. Sharples. *hc*, J. Crosland, jun., Wakefield; R. H. Flint, Warley Town, Sowerby Bridge; G. Hall; J. W. Morris; R. Swift.

GAME BANTAMS (Brown-breasted Reds).—*Cock.*—1, T. C. & E. Newbitt. 2, W. Adams. *hc*, J. Palmer, Longford, Coventry.

GAME BANTAMS (Brown-breasted Reds).—*Hens or Pullets.*—1, J. Palmer. W. Adams. *hc*, H. Shumach, Southwell. *c*, D. Parsons.

GAME BANTAMS (Any other variety).—*Cock.*—1, Miss E. A. Crawford, Farnsfield, Southwell. 2, G. Dall. *hc*, T. C. & E. Newbitt; H. Shumach. *c*, T. C. and E. Newbitt.

GAME BANTAMS (Any other variety).—*Hens or Pullets.*—1, H. Shumach. 2, G. Smith. *hc*, Mason & Charlesworth, Chesterfield. *c*, Rev. E. S. Taddeman, Childerditch Vicarage, Brentwood.

BANTAMS (White).—1 and 2, S. & R. Ashton Mottram.

BANTAMS (Any other variety).—1 and 3, M. Leno (Laced Bantams). 2, H. Pickles, jun. (Black Bantams). *hc*, Miss E. Beldon; J. Barrow, Cheadle (Black Bantams); J. Watts; S. & R. Ashton (Black Bantams); W. J. Cope, Barnsley (Pekin Bantams). *c*, W. A. Taylor; J. Thresh (Gold-laced Bantams).

PIGEONS.

POUTERS (Blue or Red).—*Cock.*—1 and 2, R. Fulton, Deptford. *Hen.*—1, E. Horner, Harewood, Leeds. 2 and *hc*, R. Fulton.

POUTERS (Any colour except Blue or Red).—*Cock.*—1, R. Fulton. 2, E. Horner. *c*, W. Harvey, Sheffield. *Hen.*—1, W. Harvey. 2, R. Fulton.

CARRIERS (Black).—*Cock.*—1, J. F. While, Birmingham. 2, E. Horner. *vhc*, R. Fulton. *hc*, R. Fulton; H. Yardley, Birmingham. *Hen.*—1, E. Horner. 2, R. Fulton. *hc*, J. Taylor.

CARRIERS (Dun)—*Cock.*—1, F. J. McLaren, Pendlebury. 2, G. J. Taylor. *Hen.*—1 and 2, R. Fulton.

CARRIERS (Any colour except Black or Dun).—*Cock.*—1 and 2, J. C. Ord, Pimlico. *Hen.*—1, R. Fulton. 2 and *hc*, J. C. Ord.

DRAGOONS (Yellow).—1, J. Holland, Manchester. 2 and *vhc*, F. Graham, Birkenhead.

DRAGOONS (Any other colour).—1 and 2, J. Holland. *hc*, J. T. Dorrington, Didsbury.

ANTWERPS.—1, J. Williams, Manchester. 2, Mrs. F. S. Arkwright, Sutton Scarsdale, Chesterfield.

JACOBINS.—1, J. Williams. 2 and *c*, E. E. M. Royds, Rochdale.

BARBS.—1 and 2, J. Firth. *hc*, R. Fulton.

FANTAILS (White).—1, C. Bulpin, Bridgwater. 2, J. F. Loversidge, Newark.

FANTAILS (Any colour except White).—1, J. Elgar, Osmanthorpe Hall, Newark. 2, P. H. Jones, Fulham.

TUMBLERS (Almond).—1 and 2, R. Fulton. *hc*, J. Ford, Monkwell Street, London. *c*, E. Horner.

BEARDS OR BALDS.—1 and 2, J. Fielding, jun., Rochdale. *hc*, W. H. C. Oates, Besthorpe, Newark.

TUMBLERS (Any variety).—1, R. Fulton. 2, J. Ford.

NUNS.—(*The whole class having been so evidently trimmed, the Judges declined awarding any prizes.*)

MAGPIES.—1 and 2, E. Horner.

TURBITS.—1, F. Mangnall, Handford. 2 and *hc*, W. Bankes, Runcorn.

SWALLOWS.—1 and 2, E. Horner.

ARCHANGELS.—1, C. Bulpin. 2, W. Harvey.

OWLS (English, Blue and Silver).—1 and 2, F. Mangnall. *hc*, W. Bankes; P. H. Jones.

OWLS (Foreign).—1 and *vhc*, J. Fielding, jun. 2, W. Harvey. *hc*, P. H. Jones.

RUNTS.—1, S. A. Wyllie, East Moulsey. 2, H. Yardley. Extra 2, P. H. Jones.

TRUMPETERS.—1, J. Firth, Dewsbury. 2, W. H. C. Oates.

ANY OTHER VARIETY NOT BEFORE NAMED.—1 and 3, W. B. Tegetmeier, Finchley. 2, J. Baily, jun., Mount Street, London (German Toy). *hc*, H. Yardley (2).

JUDGES.—*Dorkings, Spanish, Cochins, French Breeds, Extra Stock, and Bantams, except Game:* Mr. E. Hewitt, Sparkbrook, Birmingham. *Brahmas:* Messrs. Hewitt and Teebay. *Game and Game Bantams:* Mr. R. Teebay, Fulwood, Preston. *Hamburghs, Polands, Ducks, &c:* Mr. J. Dixon, North Park, Bradford, Yorkshire. *Ornamental Waterfowl:* Messrs. Dixon and Hewitt. *Pigeons:* Dr. Cottle, Cheltenham; and Mr. T. H. Ridpeth, Outwood Hall, Handforth, Cheshire.

ULCERATED FEET OF BIRDS.

IN your Journal of November 3rd (page 362) I observe a question about a Bullfinch's feet being swollen, and Mr. Blakston says it arises from the cage, &c., not being kept clean. Now this cannot be, as I knew several kept in a room afflicted with bad feet. I have observed that Bullfinches seem more subject to this complaint than other birds, but I have known Canaries affected with it. It comes on with a sort of swelling, and goes on, if not stopped, till the foot suppurates, and off drop the claws and sometimes the foot. I found out a cure for it in one-fourth of the solution of chloride of soda, and three parts of boiled rain water with just the chill off, put into a little galleypot, and the bird's feet put in twice or thrice a-day. The same water will do for a day or so, but it must be kept corked up, as this solution is a solution of soda impregnated with chlorine gas, and not as many of the chemists will tell you, common salt. I have known this cure birds after one or two of the claws have dropped off, and it may be of use to many of your readers.—A. Y.

WINTERING BEES.

WINTER has come at last, the fields this morning are all white with snow, but our little favourites, sheltered by their warm and well-protected habitations, can bid defiance to the storm. Nevertheless, so long as snow lies on the ground, they are not altogether safe from danger, or beyond the reach of destructive influences. The warm rays of an unclouded sun playing upon their hives will arouse them from their slumbers, and, attracted by the bright light reflected in at their doors, they are liable to be allured outside, where certain death awaits them. These deceitful influences would be counteracted were the cold sufficiently intense to cause a timely retreat to be beaten, but a very low temperature is not necessarily an accompaniment to a fall of snow. When the earth wears her most wintry aspect, a great degree of mildness may prevail, and the bees are not slow to take advantage of it for an airing. This they can do with perfect impunity when the surface of the snow is crisp and hard, but the case is altered if it happens to be in what may be called a soft floury condition. Could bees fly out and return again without halting, the effects would be beneficial; but it is their practice as soon as they have accomplished the object for which they left their hives, to seek for a resting place. The act of relieving themselves of a burden which has been carried for some time, seems utterly to exhaust them. After laying it down they not unfrequently fall to the earth or reel about as if intoxicated. Now, either to fall or settle upon snow in a floury condition is attended with fatal results, for they at once sink down into it, and their energies being exhausted, they cannot recover themselves in time to escape being hopelessly chilled.

It is a sad sight for a bee-master to witness the loss of a number of valuable lives, which a little foresight and trouble might have prevented. The plan of collecting these fallen and seemingly dead victims of misfortune, and reviving them again by the application of a little heat has often been tried, but I never found it turn to good account, and I can remember one instance when it was attended with positive harm. Bees thoroughly benumbed in snow do not appear capable of enduring a lengthened confinement immediately afterwards, and many of them that failed to accomplish the purpose for which their outside flight was undertaken are not careful, as formerly, to keep their hives pure and clean.

Various methods for preventing deaths happening amongst the snow have been recommended, and all of them are worthy of notice. Some advise that the hives, as soon as winter has set in, be turned round on their stands, so that the entrance may be made to face the north. But this, in many cases, is not practicable, and it is objectionable as leading to the death of all bees that leave the hive singly on those days when the time devoted to flight should be the briefest possible. Having gone out without noticing the altered position of the doorway, they cannot on their return find it immediately, and the consequence is they fly about or wander until their powers are paralysed by the cold. Others, again, advise that the entrances should be closed with perforated zinc or gauze. This, however, is apt to be resented by the bees, for, feeling the internal air becoming oppressive and seeing the light, they crowd over the zinc or gauze, seeking an exit in such numbers as to cause many to be suffocated. Bonner made use of hot tow, and it had this advantage—that whilst it allowed fresh air to be admitted within, it excluded almost entirely the entrance of light; but so long as the rays of the sun strike directly upon a hive in a sheltered situation it is vain to hope that bees feeling the warmth will remain dormant and inactive. Consequently I look upon the plan described by Mr. Taylor as one of the best that has yet been devised for keeping bees at home when the atmosphere is chilly, or soft floury snow is on the ground. It is this: "Fix before each hive a wooden screen nailed to a post sunk in the ground, and large enough to throw the whole front into shade. This does not interfere with the coming-forth of the bees at a proper temperature . . . . . and it should be fixed a foot or two in advance, and so as to intercept the sun's rays, which in winter will be chiefly towards the west side." To this I may add that if the screen be large it will be no disadvantage, but the contrary, to have it placed 3 or 4 feet from the front of the hive. Shutting up entrances beyond what will serve to exclude the field mouse should, if possible, be avoided.—R. S.

SPURIOUS HONEY.

I TOOK no part in this controversy, like your esteemed correspondent "A DEVONSHIRE BEE-KEEPER," having little light to throw upon it, and I have no knowledge of either Mr. Pettigrew or "A LANARKSHIRE BEE-KEEPER" further than from their communications to "our Journal," but I can join "in the pleasure not unmingled with profit" with which I have perused the contributions, not of Mr. Pettigrew alone, but of both.

Mr. Pettigrew's efforts to expose the rascality of any bee-keeper selling sugar-syrup for flower honey is worthy of all praise; and believing that this substitution could and has been made, and having called attention to the same subject in this Journal two years ago, I could sympathise very much with him. Still, I quite agreed with "A MANCHESTER MAN" that Mr. Pettigrew's remarks were unfortunate in coupling his censure with the Stewarton system. From inquiries I caused to be

made at the time among some of the most extensive of the Ayrshire bee-keepers, men quite above the meanness of such adulterating practices, I was assured it was by no means practised among them—that, indeed, it would not pay; and from a somewhat lengthened experience of their system I would rather incline to think it might prove a temptation to bee-keepers working on the swarming or some other mode lacking the vast population of Stewarton stocks, by which supers in favourable seasons can be readily filled without any such extraneous aids.

That Mr. Pettigrew unfairly maligned the bee-keepers of a county where practical bee-keeping has been brought to perfection, and who turn out supers unsurpassable anywhere—materially assisted by the abundance of white clover in their old pastures, and their painstaking in moving their stocks from earlier to later districts as the season advances, and procuring swarms from localities earlier than their own—can be clearly demonstrated from the following:—Supposing they were so unprincipled as to fabricate sugar-syrup comb in the wholesale manner indicated, so that three boxes could be sent to Manchester and come under his review at one time, during a season when, from the unexampled abundance of clover honey, the finest supers were readily procurable at from 9*d.* to 1*s.* per lb.; yet this last season, from the extreme dryness of the summer, the staple flower so utterly failed to secrete its wonted nectar, that I was informed by a leading Ayrshire bee-keeper there had not been, he believed, a single completed box of clover honey in all the county. What a chance for the adulterators! Clover honey not to be had, a warm summer with their bees all idle ready to store; and how opportunely a railway opened bringing the finest Greenock crush sugar direct from the refinery to their own doors! And what do we find? After inquiring of the most extensive honey dealers in Glasgow I have had invariably the same answer—"Not offered a box of honey from Ayrshire this season." This surely requires no comment.

But how are we to get over the three supers referred to by Mr. Pettigrew, who positively asserted they were sugar syrup? "A Lanarkshire Bee-keeper," on the other hand, who seemed to have inspected them before their dispatch, was equally confident they contained no more sugar than his pen. Of this I know absolutely nothing. Would Mr. Pettigrew pardon the suggestion that possibly he may have been mistaken? seeing clover honey from Stewarton hives, gathered so rapidly as it was in such a summer as that of 1869, was of a limpid purity not unlike syrup, and likely to cause a party unfamiliar with it to make the mistake, which has frequently been made before.

To illustrate this, I have a very vivid recollection, in the days of my novitiate, of the first time I examined in a Glasgow Italian warehouse some supers of clover honey. The combs were so massive and straight-wrought, and their contents of such dazzling purity, that I came away thoroughly disgusted with my poor tops at home, of which I had been previously not a little proud, with their twisted unsealed combs irregularly studded with odd pollen-cells and small patches of brood, and all abominably discoloured over the central holes of my straw skeps. I speedily took counsel of my preceptor, a shrewd and most experienced bee-master of the old school, and exactly such as I picture in my mind's eye Mr. Pettigrew to be, and related the marvels I had witnessed. He listened quietly, unmoved at my glowing description. Had he seen them too? I asked. With a twinkle in his eye and a shrug of his shoulders, "Oh yes; yon's all sugar," was the reply I was staggered with. Not quite content with this, I subsequently made repeated excursions into Ayrshire to acquire a knowledge of the Stewarton system, purchased hives, and set to work; and after a good many years' experience it so happened that I took last season from a Stewarton stock at one lift three, and the previous season from the same colony four, 20-lb. supers, that for straightness and purity would fairly vie with the above, and the stock had not had a single tea-spoonful of sugar for the last three years, convincing me how thoroughly my old friend had been mistaken. I have been assured by most experienced judges of honey who officiate at the leading shows, that such adulteration of honeycomb is seldom to be met with, that it would not pay, and is resorted to by the merest novices to complete a box or glass, but that the difference of colour and rough crystallised appearance at once lead to detection.

Mr. Pettigrew, in No. 446, remarks, and very justly too, that "Sweetened water never becomes honey, even though twice swallowed and disgorged by bees." He may not be aware, and it may interest him to know, that seven or eight years ago the theory was advanced that sugar syrup so swallowed underwent a chemical change before being stored by the bees, so as to convert it into veritable honey; but this doctrine, though upheld by high authority, including one of the ablest pens whose contributions adorn the bee portion of the Journal, our Editors, to their credit be it mentioned, strenuously resisted.—A Renfrewshire Bee-keeper.

FOUL BROOD.

There is a Latin phrase, *Tempora mutantur et nos mutamur in illis*. I wonder whether "A Renfrewshire Bee-keeper," or myself, have changed most in our opinions on this very subject of foul brood. I have hitherto always acknowledged the courtesy of language, and general fairness of "A Renfrewshire Bee-keeper" as a controversialist on this and other bee subjects, but in the article before me I fear that he has deviated somewhat from this excellent rule. May I not express the opinion, that in taking up these articles for criticism and remark, after so long an interval of time, he has overlooked much in them which behoved him to notice, and inadvertently, perhaps, led him to reiterate charges of "unfairness," which I thought were long ago refuted and abandoned? In this way he has chosen rather to crack the nut than to taste the kernel; to look upon the casket more than its contents. May I also be permitted to make a similar observation in reference to Mr. Woodbury's reply to these articles immediately after their appearance in the Journal?

There is one remark, however, which has been so often made before, and which is again repeated, *ad nauseam*, by "A Renfrewshire Bee-keeper"—namely, that I "unfairly ignored" Mr. Woodbury's experiences as to the manner in which foul brood was introduced into his apiary. Now, I cannot see this. In combating opinions, we are not ignoring facts. In opposing the beliefs and experiences of others by counter beliefs and experiences of our own, we are not necessarily trespassing against the rules of "fairness." No. We are merely calling into question the accuracy of observation, the correctness of inference. The author of "The Handy Book of Bees," for instance, among other errors he has committed in the natural history of our little favourites, boldly asserts that bees remove eggs, and assist the queen in placing them in the cells! Also, that queens are reared from drone eggs! And, again, that the queen in setting out on her marriage tour, is pursued through the air by a host of males, probably like a fox by a pack of hounds, so that the poor queen comes to grief often, as master Reynard does, and may sometimes be found lying on the ground literally almost worried to death, by a cluster of rapacious drones! The author, for whom as a practical apiarian I entertain a high opinion, and whose "Handy Book" I have read with much pleasure, is, no doubt, perfectly sincere in his beliefs; but these, in my opinion, are not facts, but mere fancies, unsupported by evidence, and contrary to all careful observation and sound experiment. So also as to the new method of controlling the fertilisation of the queen. It is vouched for by several most respectable individuals. Details are given, and evidence is cited, but, nevertheless, and notwithstanding all this, I believe them to be in error. I reckon the asserted facts are but fancies, optical delusions it may be, or errors in observation and experiment.

Now, if this is the kind of "unfairly ignoring," to which "A Renfrewshire Bee-keeper" refers, he has not chosen the most appropriate words to characterise what I hold everyone in this land of free thought and utterance is privileged to exercise—viz., the unfettered expression of opinions on all subjects, not even excepting this large question in the eyes of apiarians, the origin of foul brood.

As to the subject foul brood itself, how stands it? Whence its origin? How its cure? Have apiarian authors and writers agreed as to the first? Is there a *concensus* of opinion as to the latter? I trow not. Is there not rather a Babel of discord and contrariety? The great aim of some is to discover a remedy for the evil; mine has been to ascertain its origin, prevention being in my estimation better than cure. I ascribed it, according to my experience, to chill, neglect of the brood, and other cognate influences; and I have conceded that brood stewed alive by heat may be as disastrous, for aught I knew, to a colony of bees, as brood starved by neglect and cold. The great question is, Have like evil results followed both extremes? It is not a paradox that dissimilar causes may produce similar results. "A Renfrewshire Bee-keeper" believes that overheating originates foul brood. I believe it frequently may. I also believe that from very opposite causes, such as I have named, the same results also frequently follow.

When I first promulgated these views I wrote from personal experience only. I knew nothing of Dzierzon, Baron von Berlepsch, and Quinby's experiences in foul brood. Had I done so I might have dwelt less upon remedial processes, which at best, I admit, are unsatisfactory, and "A Renfrewshire Bee-keeper" knows that I even then declined to undertake the cure of a hive he was so kind as to proffer me.

Let me ask "A Renfrewshire Bee-keeper" to look those articles over again upon which he has bestowed some criticism, and see the quotations I make from various authors and writers, more especially from Dr. Preuss, how similar his views are to my own in respect to the bad effects of unhatched, neglected, or chilled brood, not being removed from any hive, furnishing by their presence "a particularly favourable soil" for the introduction of fungi, and consequently, according to his theory, of foul brood. Why should a critic so fair as "A Renfrewshire Bee-keeper" ignore all this evidence I put

before him and others, so as not to devote one single word to its consideration? He will see I do not now stand alone in my opinions, nor can they any longer be called peculiar. They are shared more or less by several of the most scientific writers on the subject. I believe foul brood may originate from other causes, as I have already stated in the articles referred to; and on the assumption that Dr. Preuss's theory is a correct one, I could reconcile, I think, as already expressed, what appear to be conflicting propositions, more especially as to the manner in which foul brood often originates, and, once produced, how it is propagated.

"A RENFREWSHIRE BEE-KEEPER," I should notice, is unwilling to concede the point that there is any analogy between brood killed by heat and brood killed by cold, and ascribes foul brood in the former case, not to the presence of dead and unremoved larvæ, but to the fermenting of the honey, "induced, doubtless, by the effects of the heat and the condensed moisture mixing with the unsealed honey, causing it to ferment, and acting in a deleterious manner on the larvæ when fed with it." This is, I think, a very questionable surmise, and for my part I can see no ground whatever for such an idea.

I conclude this New Year's communication by cordially wishing "A RENFREWSHIRE BEE-KEEPER," and all my apiarian brethren who interchange opinions in our especial corner of the Journal, many happy returns of the season, not forgetting our respected and worthy Editors, by whose kind indulgence I am permitted to say so much.—J. LOWE.

[Want of space has obliged us to omit some paragraphs.—EDS.]

OUR LETTER BOX.

BOOKS (*H. C.*).—The book you mention is 3*s.* 6*d.* uncoloured, and 7*s.* 6*d.* coloured. Any bookseller can obtain it for you.

POULTRY AND CANARY SHOWS.—We have received the lists of prizes awarded at Skelton and some other shows, but we do not publish them, concluding that they are only of local interest, as the committees did not advertise them.

GOLD-SPANGLED HAMBURGHS (*Gallus*).—We cannot find space for a detail of "the full points of both cock and hen." If you enclose seven postage stamps with your address we will send you, post free, "Poultry Book for the Many." It contains the points of all the varieties. Eaton's book is out of print. The late Mr. Brent edited "The Pigeon Book." You can have it post free for twenty postage stamps.

EXHIBITING TOGETHER DIFFERENTLY-AGED FOWLS (*Amateur*).—Where there is no restriction, and no rule to the contrary, birds of different ages may be shown together. When the classes are defined and separated, it must not be, as it is at least a dishonourable proceeding. In making up a pen of different ages you must be careful that all the birds match in size and appearance. Although nothing is more difficult than to tell the exact ages of fowls after they have reached maturity (say ten months), yet there is often a perceptible difference between a pullet and a hen, and if the judges are hard run, they are glad of anything that will justify them in striking out a pen.

BRAHMA CHICKENS CROOKED-BREASTED (*W. J.*).—The crooked breast-bone does not make the bird delicate. We should be disposed to attribute the defect to their having perched too early. Brahmas are birds of quick growth, and are lanky when young. If put on the perch too soon their legs are not strong enough to bear the weight of their bodies by grasping the perch with their toes, and, consequently, they rest their breasts upon it. As the breast-bone is then little better than a cartilage, it takes the impress of the perch. We do not for a moment believe you will find it hereditary, any more than you would expect a child to have a contracted form because its mother when young laced too tightly. They will soon lay, but, as a rule, birds that are meant to do so before Christmas should be hatched either late in April or very early in May. We breed many fowls, and are, unfortunately, overrun with rats, but we do not think our chickens in danger when they are large enough to remain on the perch when put there.

SICK FOWLS (*Subscriber*).—Give No. 1 Baily's pills, and add to them one pill daily of camphor the size of a garden pea. Give No. 2 Baily's pills, and follow them, when the bird is convalescent, with meals of bread and ale three times per day. Give No. 3 castor oil, a table-spoonful every day, till the blood and yellow matter have ceased, and the evacuations are brown and white. You must watch that she be not too much reduced. If she is, give her bread and ale. Case No. 3 is the worst.

HEATING A BARN FOR FOWLS (*R. S.*).—We are not friendly to heat derived from a flue for poultry. It has a tendency to enervate them. They no longer wander abroad in search of food, but finding it cold out of the house they return to it, and squat about in it all day. The proper way to make fowls lay, and to keep them warm is to feed them well. All they require at night in the way of warmth, is to be lodged in a dry place thoroughly protected from draught. If you keep as many as a thousand, or even five hundred fowls, you will do better by dividing them in several houses rather than putting them all in one. It is far healthier. If you intend to make a profit from the sale of eggs, you must be careful to get a supply in the winter when they are most saleable. For this you will have to keep pullets hatched in April and May. We think you will do as well with Brahmas and Cochins as with any breed. They are very strong and healthy. That is what you require where many are kept together.

DORKING COCKERELS (*Gilbert*).—The difference in a Grey or a Silver-Grey Dorking cock is, that in the first there is no decided plumage, but in the second the breast and tail must be purely black, one white spot would disqualify. The hackle and saddle must also be white instead of straw-coloured.

MANCHESTER SHOW.—"In consequence of the address of this Show and that of the exhibitor being on the same side of the label, my five pens of Spanish which were entered for it, came to me from a run in Cheshire, where I keep them, instead of being delivered in Manchester. I think it would be better in future that the addresses should be on different sides, as at most shows; as it is very annoying to have one's pens empty when the birds look like winning.—H. YARDLEY."

CANARIES STOLEN AT IPSWICH (*J. N. H.*).—We do not think that more notice would avail. Committees should have more watchers.

CRYSTAL PALACE SHOW (*Oxoniensis*).—We believe before you see this you will have received the amount.

RING DOVES (*R. L.*).—We have frequently known them kept in greenhouses all the year, and never heard of their suffering from the humid atmosphere.

HYPO-SULPHITE OF SODA.—This was erroneously printed hypo-sulphate on page 525.

POINTER DISEASED (*J. P. C.*).—The convulsive jerking and twitching of the neck and chest indicate chorea. Meyrick, in his excellent little volume on dogs, gives the following directions:—"The general health and diet must first be attended to. A few doses of castor oil are usually necessary; accompanied by blue pill (dose five grains), if the liver is deranged, as shown by the clay colour of the fæces. The food should be given twice a-day, and should consist principally of vegetables, potatoes, oatmeal porridge, &c. When a better state of health is established, it will be time to give medicines to remove the disease itself. For this purpose it is best to begin with liquor arsenicalis, mixing two drops with each meal, so that the dog will take four drops in the day. The quantity must be gradually and cautiously increased by one drop daily, and so increased for a week. The same quantity must then be continued, and will often have to be given regularly every day for a month before a perfect cure is effected. As soon as the dog rejects his food, is bloodshot in the eyes, or has a running at the nose, it is necessary to stop the medicine, at least for a time. If it has had no perceptible effect in subduing the convulsive jerkings of the muscles, it would be advisable to try, night and morning, a ball containing sulphate of zinc, two grains; powdered gentian, ten grains; syrup of ginger, qu. suff."

WATERPROOFING (*J. D. L.*).—The composition varies according to the object to be attained; state for what you need it.

METEOROLOGICAL OBSERVATIONS

In the Suburbs of London for the week ending December 27th.

DATE.	BAROMETER.		THERMOMETER.				WIND.	RAIN
			Air.		Earth.			
	Max.	Min.	Max.	Min.	1 ft.	2 ft.		
Wed.. 21	29.838	29.662	32	21	43	43	E.	.00
Thurs.. 22	29.864	29.844	28	9	40	41	E.	.00
Fri.... 23	29.888	29.800	34	6	35	39	N.	.00
Sat. ... 24	29.696	29.614	28	2	35	38	N.E.	.00
Sun. .. 25	29.646	29.598	34	14	34	38	N.E.	.00
Mon... 26	29.838	29.724	34	16	34	36	N.	.00
Tues.. 27	29.844	29.686	31	25	35	36	N.E.	.00
Mean..	29.802	29.704	31.57	15.29	35.71	38.71	..	0.00

21.—Overcast; snow; cold wind, sharp frost.
22.—Sharp frost; snow; clear and frosty.
23.—Intense frost; fine, frosty; clear and frosty.
24.—Intense frost; frosty fog; frosty fog at night.
25.—Sharp frost; cold wind; overcast and frosty.
26.—Overcast, cold wind; densely overcast; slight snow.
27.—Sharp frost; overcast; heavy fall of snow.

COVENT GARDEN MARKET.—JANUARY 4.

BUSINESS transactions are limited to supplying the daily wants, and Saturday is now the only market day on which we are likely to get what we require. Hothouse produce, however, is sufficient for present purposes, and does not meet with the demand usually experienced at this season. Potatoes are amply supplied. Trade is dull.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....½ sieve	1	0	to 2	0	Oranges.....₱ 100	6	0	to 10	0
Chestnuts.....bushel	10	0	18	0	Pears, kitchen .....doz.	1	0	2	0
Filberts.....lb.	0	0	2	0	dessert.....doz.	1	0	3	0
Cobs.....lb.	2	0	2	6	Pine Apples .....lb.	3	0	5	0
Grapes, Hothouse....lb.	4	0	8	0	Plums.....½ sieve	1	6	3	0
Lemons.....₱ 100	6	0	10	0	Walnuts.....bushel	10	0	16	0
Melons.....each	1	0	4	0	do.....₱ 100	1	0	2	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Beans, Kidney ....₱ 100	2	0	to 3	0	Lettuce .....doz.	0	9	to 1	0
Beet, Red.....doz.	2	0	3	0	Mushrooms ..... pottle	1	0	2	6
Broccoli .....bundle	0	9	1	6	Mustard & Cress..punnet	0	2	0	0
Brussels Sprouts..½ sieve	2	0	3	0	Onions .....bushel	3	0	5	0
Cabbage.....doz.	1	0	2	0	pickling.....quart	0	4	0	0
Carrots.....bunch	0	4	0	8	Parsley... .....sieve	3	0	6	0
Cauliflower.....doz.	2	0	6	0	Parsnips.....doz.	0	9	1	6
Celery.....bundle	1	6	2	0	Potatoes.....bushel	2	0	4	0
Coleworts..doz. bunches	3	0	6	0	Kidney.....do.	3	0	4	0
Cucumbers .....each	0	9	1	6	Radishes .. doz. bunches	0	6	1	0
Endive.....doz.	2	0	0	0	Savoys.....doz.	1	6	2	0
Fennel.....bunch	0	9	0	0	Sea-kale .....basket	2	0	2	0
Garlic.....lb.	0	8	0	0	Shallots .....lb.	0	6	0	8
Herbs.....bunch	0	3	0	0	Spinach .....bushel	2	0	2	6
Horseradish ....bundle	3	0	5	0	Tomatoes .....doz.	3	0	0	0
Leeks .....bunch	0	4	0	0	Turnips .....bunch	0	6	0	0

POULTRY MARKET.—JANUARY 4.

THE Christmas arrivals from abroad are not yet quite disposed of. The excitement of Christmas always gives way to positive collapse, and there is no trade worth quoting. Another thing to be noted is, that frost will often stimulate trade, but snow always destroys it and hinders all demand. It also interferes much with supply. We make quotations to the best of our ability.

	s.	d.	s.	d.		s.	d.	s.	d.
Large Fowls	3	6	to 4	0	Pigeons	0	9	to 0	10
Smaller ditto	2	0	2	6	Rabbits	1	4	1	5
Chickens	1	6	1	9	Wild ditto	0	9	0	10
Ducks	2	0	2	6	Hares	3	6	4	0
Geese	7	0	7	6	Partridges	1	6	1	9
Pheasants.....	2	0	2	3	Grouse	0	0	0	0

WEEKLY CALENDAR.

Day of Month	Day of Week.	JANUARY 12—18, 1871.	Average Temperature near London. Day.	Night.	Mean.	Rain in 43 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
							m. h.	m. h.	m. h.	m. h.	Days.	m. s.	
12	Th		42.1	29.5	35.8	18	4 af 8	14 af 4	49 af 10	1af 11	21	8 30	12
13	F	Cambridge Lent Term begins.	43.0	29.3	36.2	19	3 8	15 4	morn.	21 11	22	8 53	13
14	S	Oxford Lent Term begins.	42.1	29.9	36.0	19	2 8	17 4	5 0	41 11	☾	9 15	14
15	Sun	2 Sunday after Epiphany.	41.7	28 9	35.3	18	1 8	19 4	25 1	after.	24	9 37	15
16	M		42.0	31.0	36.5	20	0 8	20 4	49 2	30 0	25	9 58	16
17	Tu		42.6	28.7	35.6	15	59 7	21 4	9 4	3 1	26	10 18	17
18	W	Royal Horticultural Society, Fruit, Floral, [and General Meeting.	42.6	31.3	36.9	18	58 7	23 4	30 5	45 1	27	10 38	18

From observations taken near London during forty-three years, the average day temperature of the week is 42.3°, and its night temperature 29.8°. The greatest heat was 54°, on the 12th, 1852; and the lowest cold 3°, on the 13th, 1867. The greatest fall of rain was 0.86 inch.

GARDENERS AND GARDENING.

THOUGH this is a subject to which I have given much thought, it is one which I approach with diffidence, for I by no means pretend to the possession in person of all the qualifications to which I shall allude, but it is from a desire to draw attention to the subject, more especially the attention of youthful aspirants, that these notes are written.

It is an acknowledged fact that second and third-rate gardeners, or, to speak more correctly, men who will give their services at a comparatively low rate of remuneration, are much more in request than first-class men. This may easily be accounted for from the fact that small gardens are more numerous than large gardens; and although, as a rule, the pay is low in small places, there are always plenty of men of moderate capacity on the out-look for such vacancies, many of which are not unfrequently filled by persons professing to be able to do things quite beyond their abilities.

Another reason worthy of serious consideration is, that the majority of men trained in large, or even in moderate-sized establishments look down with contempt on small gardens and those who have charge of them, and yet I have known many a small garden so skilfully managed, and everything in it so thoroughly well done, that it quite surpassed its larger neighbours. To have the charge of a large garden is a laudable ambition, but when the object of this desire is attained it does not always bring with it the expected gratification, for many large places have serious drawbacks, such as deficiency of labour power, little manure to renovate the soil, a poor supply of water, and other hindrances to success; so that a man, however zealous he may be, may spend his strength in vain efforts to overcome such formidable obstacles.

"Whatever is worth doing at all, is worth doing well," is a maxim which gardeners above all other men should apply to their work, and, therefore, before taking charge of a garden, it is very important to ascertain if the assistance and working materials are in proportion to the size of the place, and if not, it is much wiser not to run the risk of failure by entering upon an engagement which is likely to prove unsatisfactory. When a man deliberately takes charge of a garden it should be with the firm resolve to strive for success to the utmost of his abilities. Gardening is an arduous pursuit, fraught with many difficulties which only the really earnest man can hope to surmount; it has no royal road to success, but demands unceasing diligence, foresight, and care. To the man who likes it for itself, and is thoroughly devoted to it, success is the best reward, and whether the garden under his hands be large or small will be not so important a consideration as that every plant and crop may be brought as near to perfection as possible.

Let us now consider what are the requisite qualifications of a good gardener. As I have before said, he should be thoroughly devoted to his calling, earnest, diligent, energetic, and thoughtful; he should not be content to take things for granted, but should strive to search into cause and effect for himself; not given overmuch to experiments, and yet ever seeking for reasonable improvements with a view to the advantage of himself and his fellow-men; for he should be altogether free from that narrowmindedness which seeks to withhold knowledge, but should be ever ready to impart or receive instruction. In controlling his assistants and labourers he should, by a judicious exercise of firmness and kindness, see that his rules are strictly acted up to and his orders obeyed to the letter. Harsh language should never be resorted to; it is degrading both to master and man. Amongst a number of men there are certain to be a variety of dispositions and character—some will be cringing or officious, others dilatory and careless, while a third party will quietly obey orders without any display of overmuch zeal, and it is this latter class who generally prove to be the best men. But, whatever may be the dispositions of the men, a quiet, firm rule, tempered with kindness, is by far the best method of controlling them.

In his intercourse with his employers and all others of a higher station than himself there can be no necessity for cringing or an excessive display of humility; all due respect should, of course, be paid, and every wish and order carefully attended to. A man can be respectful without cringing, and quietly study the wishes of his employers without officiousness.

In the management of a garden, close attention should be given to the smallest details—nothing should be overlooked or done in a slovenly manner; there should be no neglected corners, weedy paths, nor dirty houses; but cleanliness, order, and exquisite neatness should everywhere prevail; even the very heaps of soil and rubbish should possess a trim appearance. Great care, too, should be taken to name each plant correctly with neat labels and plain writing, without any display of flourishes or fanciful colouring. A gardener ought, certainly, to be acquainted with the nomenclature of every plant under his care, but too little attention is given to this in private gardens; even when plants appear to be carefully labelled, the spelling of the names is often very faulty, and that, too, in many of our leading gardens. While devoting proper attention to this important point all pedantic display should be avoided. The mouthing of scientific names, if profuse, becomes ridiculous.

The difficulties which beset the gardener in the pursuit of his calling are undoubtedly very numerous; but then, if he be a man of energy and resource, every trial acts as an incentive to increased exertion. The experience gained in all such struggles is of the highest value, and when once the habit of boldly facing a difficulty is formed, it becomes part of one's nature.

In thinking over a gardener's difficulties, his position as a servant naturally comes to mind. It is to be feared that there is a lamentable spirit of mistrust and antagonism existing between many gardeners and their employers. This is very much to be deplored, for its existence must seriously affect the enjoyment of the one in his garden,

and the efforts of the other in his care and culture of the plants entrusted to him. A very common subject of complaint is, that in the garden the gardener assumes to be "Lord paramount," entirely ignoring all knowledge of his business in those who employ him. It is to be feared that this is not unfrequently the case, but it surely ought not to be so; common courtesy, to say nothing of duty, should teach one to receive the commands of those whom one serves with the greatest respect, and if possible to carry them out to the letter; if this cannot be done, a respectful remonstrance should suffice.

Very much has been written concerning the trials and difficulties which beset a gardener in the pursuit of his calling, but it is very rarely indeed that anything is said about the privileges and enjoyments which are his. I will venture to step out of this beaten path, and forget for a moment the anxieties of frosty nights, unkindly seasons, and all the ills which endanger our tender crops and delicate exotics, and will glance at the "bright side of things." Surrounded by Nature's choicest gems in an endless variety of form and colour, each season presenting its peculiar attractions—the freshness of spring, the richer developments of summer, the fulness and abundance of autumn, and the soberness of winter, all are peculiarly his to enjoy. Then there are the multitude of interesting objects constantly claiming his attention, and if many of them do try his skill to the utmost, why the greater the exertion the greater the enjoyment of the success which generally follows. There can be no complaint of sameness, but rather of repletion, for novelties of all kinds are constantly pouring in upon us, exciting much interest, and affording much amusement in the comparison and trial of their merits. And so I might go on, and enumerate all the brightness and beauty which we enjoy, but I will rest contented with observing that we may all be happier, better men if we go through life without giving undue weight to its cares and sorrows, but rather striving to realise its blessings, of which many of us possess a much greater share than we are aware of until they are taken away.—Edward Luckhurst, *Old Lands, Buxted, Sussex.*

BEDDING GERANIUMS.

Though I am afraid some of your readers will be tired of the subject of bedding Geraniums, yet there are others who may be interested in some notes I made last year, at the establishments of three of the principal raisers of Zonal Geraniums—namely, at Mr. Pearson's, of Chilwell; Mr. W. Paul's, of Waltham Cross; and Mr. Laing's (of the firm of Downie, Laird, and Laing), at Stanstead Park. I name them in the order in which I visited them.

Chilwell Nurseries have been so well described by your able correspondent Mr. Luckhurst, that I shall not say much with respect to the nurseries themselves, but merely confirm what Mr. Luckhurst says with regard to the thorough way in which Mr. Pearson carries out all he does there. I consider Mr. Pearson's glass ranges models of what glass houses ought to be, and I agree with him in what he said in his article on horticultural fallacies, that it is very astonishing to see the old moveable sash-lights and slides, with heavy rafters, still being built.

My first visit this year at Chilwell was on the 24th of June, when, owing to the exceeding drought, the Geraniums had not sufficiently recovered their planting-out. Among the seedlings sent out by Mr. Pearson in 1870, I consider the best to be William Thompson (an improvement on Bayard), Thomas Speed, and Douglas Pearson (also an improvement on Bayard). Of these three Thomas Speed is the darkest, a crimson; and Douglas Pearson the brightest, a scarlet crimson. Duke of Portland and Duke of Devonshire are more of the true Zonal, and likely to be very good for pot culture. E. J. Lowe is a very fine rose pink, with large pip and truss, which may prove too strong for bedding. Lawrence Heywood is a peculiar shade when bedded, lilac rose, with a fine head of flowers, though rather weak in the flower stalk—in fact, I think the chief fault of the Geraniums sent out by Mr. Pearson in 1870 is, that the trusses are too large for the stalks, having too much of the Black Dwarf strain. This fault is remedied in seedlings of 1870, which will most probably be sent out in 1872, as he has several very valuable strains from Violet Hill, one of which (he has named it Miss Rose Peach), will, if it turn out as well as it promises, give us one of the desiderata, a dwarf pink bedder. Another, a lilac seedling, called Mrs. Reynolds Hole, is also of great promise. He has also several fine seedlings of 1870, of the Bayard strain, with stiffer flower stalks; but of these I hope to give a further account next summer, and I hope, as the Royal Horticultural Show is so near Nottingham, that we shall see some of his seedlings there. It was still more difficult to test the 1869 seedlings, the best of which had been saved and worked-up for stock, and the dryness of the weather had prevented them showing to their best.

My second visit to Chilwell was on the 5th of August, when I looked through several hundreds, if not thousands, of seedlings. Several very good pinks and lilacs of the dwarf section had bloomed since I had been there before. Many of them were put aside for future trial, and almost any would be valuable as bedders, the great difficulty being to select the best.

The Tricolors had much improved, and one called Mr. W. Sanday (after an old and valued friend of mine, an eminent champion with Leicester sheep), is one of the most distinct and striking among the Tricolors, as a bedder, that I have seen as yet. Other very good ones were Mrs. Edge and Edith Pearson. It was still difficult to judge of the 1869 seedlings owing to the very trying summer, but where there are so many seedlings to select from, and with the care which Mr. Pearson personally gives to the selection, the public may safely try any Geraniums, especially Zonal Nosegays, sent out from Chilwell.

The next nursery I visited in pursuit of new Geraniums was Mr. W. Paul's, at Waltham Cross. Having gone up to London to assist at the inauguration of the Metropolitan Floral Show, I went on September 7th to Waltham. I was very unlucky in my day; it began to pour just as I was starting, and owing to the causeway in the Strand being all pulled up for repairs, I missed the train at Bishopsgate Street by a few seconds, the door of the station being closed as I was paying the cabman, and I had to wait for nearly two hours. When I got to Waltham it still kept on a pouring rain, and I had to see the Geraniums under an umbrella. It was, therefore, a great trial to them, especially as there had been heavy rain several times during the ten days previous, but the Geraniums bore the trial well. Among the best were:—Bonfire, a fine scarlet crimson, large truss, dwarf habit, with good footstalk, apparently a very free bloomer, and a very desirable sort. Robinson Crusoe, magenta crimson, with a flame on two top petals, a fine flower to look close at, and good for pot culture. Titan, fine rose, but too strong a grower to please me for bedding. Waltham Nosegay, well known, much like Waltham Seedling, but with a plainer leaf; and while referring to Waltham Seedling I cannot refrain from mentioning one of its most valuable qualities which is too often lost sight of, the continuity of blooming. I have two letters from friends to whom I recommended it, saying it had lasted longer with them than any other sort, and I have heard since from Mr. Paul, that he has had the same testimony from Mr. Moore and Mr. Gibson. The young ladies of Beulah Cottage condemned it for its smallness of truss. I can only say I have measured the trusses from 4 to 5 inches across, and though I quite agree with the young ladies that one of the greatest merits in a bedding Geranium is size of truss, still freedom and constancy of bloom, with a good habit of footstalk to show the bloom to advantage and stand weather, are more valuable still, and in this Waltham Seedling and Violet Hill are as yet unbeaten.

But to return. The next marked in my note-book was Rainbow, something of the colour of the old Sutton's Perfection, but a Nosegay; then Vesta, a dwarf dark scarlet, very favourably reported on in the Chiswick trials (first-class certificate). Next came Comet, a fine orange scarlet, not quite orange enough, but of a very striking colour and fine habit of growth, dwarf and compact. A fine pure orange is still wanted. Evening Star, a peculiar shade of soft rose, also dwarf. Boadicea, rather like Robinson Crusoe, but not so dark in colour; likely to come out well in autumn. Cyrus, an improvement on Glory of Waltham, more dwarf and free-blooming. Lilac Rival, of which I cannot recall the habit. Dante and Penelope, both very good rose pinks, adapted for pot culture, but also good for stronger beds or ribbon borders. Claude Lorraine, another fine shade of magenta, likely to prove a good bedder. I had not time to go through Mr. Paul's seedlings as I should have liked, as I was due at Sawbridgeworth at 3 20 to see Mr. Rivers's nurseries, and I had not time either to take special notes of the Tricolors or white-edged varieties, of which Mr. Paul has so good examples in Avalanche and Waltham Bride.

The next day I went to Stanstead Park to see Mr. Laing's nurseries, and was more favoured in my weather. I especially went to see his seedling Bronzes, but there were Nosegay seedlings as good as the Bronzes. Several of them I have already described, and they are known to many of your readers.

Lady Kirkland, which I had only judged before from a single plant in my possession, which I had thought most promising, more than verified what I expected of it. The trusses are very fine, and I especially remarked the whole bed had not a seed pod on it, and Mr. Laing said it hardly ever showed one during the exceedingly hot weather. In colour it is something like Duchess of Sutherland. Lady Hawley, another sent out by Mr. Laing this year, was also very good, fine scarlet, a crimson shade, not orange, dwarf, and free-blooming. Sunshine and Sunlight, also good. They have bloomed exceedingly well with me in small pots this winter, cuttings struck in August being in good bloom now. Of the Zonal Nosegay seedlings not yet sent out were Star of Fire, scarlet crimson, very vivid colour, free-blooming and spreading habit, sure to be a good bedder; and Phœbe, orange cerise, of nearly the same habit as Star of Fire; Moor of Venice, pure crimson, fine colour and good habit; George Peabody, somewhat similar in colour but more scarlet, also not seeding, in habit putting me much in mind of Mr. Pearson's strain. Mr. Laing had several of the French seedlings planted out, but all seemed to me to be wanting in firmness of petal.

But the greatest acquisition among new seedlings was a pink Zonal Nosegay called Pink Queen, a basket of which Mr. Laing had shown at the Metropolitan Floral Show at the Crystal Palace, and which I here saw planted out. In colour it is more like Helen Lindsay than anything else, but it is of a finer tint, and has a large truss instead of a small one, as Helen Lindsay has; to judge from the way small plants of it bloom it is likely to prove a most valuable bedder, Mr. Pearson's seedling Miss Rose Peach being the only rival to it I have yet seen.

To turn to the Bronze and Gold section. There were many fine unnamed seedlings planted out, though as bedders none, I think, surpass two Mr. Laing has already sent out—Impératrice Eugénie and Crown Prince. The first, Impératrice Eugénie, is the most brilliant in point of colouring of any Geranium I have yet seen bedded in mass; and next to it comes Crown Prince with a stronger habit, though it will never be coarse, as it has so little green in it. Mr. Laing had most of his best seedlings at the Crystal Palace, but as they were still unnamed it is not possible to particularise them. In my opinion, however, in aiming after form and breadth of zone he has rather lost colour, some of the zones in the Bronzes being so broad as to leave very little centre or margin; but for those who like very circular flat leaves and dark-coloured zones of the Black Knight type there are some very fine sorts. Next to Impératrice Eugénie I class Brilliancy in point of colouring; then come Mrs. Alan Loundes, Harrison Weir, Princess of Wales, and Charming. Mrs. Lewis Lloyd, a fine gold colour with only a narrow zone of red, makes a very striking bed. One peculiarity of this type of Bronze is, as I have before remarked, that they do not turn green as they die off, but a lighter colour, the zones sometimes crimson, and the effect in a bed is very remarkable; in fact, the colour of a bed of Impératrice Eugénie is more gold and red than bronze. They require warm treatment in winter and good food in summer to bring out their colours, and they well repay all care.

I would again repeat what I have said before: If people wish to have Geraniums in good order when planting, and to make a garden gay early, never let them be too cold in winter. Hardy though they are, a cold damp treatment is the worst they can have. Keep them growing, with plenty of light and air, and a temperature never under 45° nor above 60°, and a garden will be gay a month or six weeks sooner than if they had been what persons call hardened in the winter, which is really no hardening, but a stagnation of life from which the plants recover with difficulty. I have now all my cuttings, which were not taken from the beds till the middle of September, potted off, and they are more forward than if they had been struck in the open ground in August and then kept in cold frames and pits, and they will be still more forward by bedding-out time.—C. P. Peach.

The Advantages of Bottom Heat on a Large Scale.—One of the most curious phenomena in connection with coal mining is exhibited at the Bank Colliery, near Rotherham, the property of Earl Fitzwilliam. This pit caught fire one hundred years ago, and all the efforts of the workmen at the time, and subsequently, have been quite ineffectual to extinguish it. A short time ago it was ascertained that the flames were approaching the bottom of the shaft, and it was then resolved, if possible, to stay their progress, so that they might not extend to other parts of the workings. At length the superintendent of the collieries, Mr. T. Cooper, conceived the idea of building a wall to shut in the fire, and in order to ascertain the best site for this wall, several of the officials crept on their hands and knees, through the dense stifling smoke, as far as possible into the workings. Their efforts were successful, and a wall is now completed nearly 1000 yards in length, and varying from 9 inches to 5 feet in thickness. At distances varying from 30 to 50 yards metal pipes have been inserted in this wall, which are securely plugged at the end, so that at any time, by removing the pluge, the state of the air on the side of the fire, and even the position of the fire itself, can be ascertained. So intense is the heat arising from this fire that people possessing gardens above the colliery declare that the growth of plants is materially affected, and that they are enabled to obtain two and three crops every year.

GROWING EARLY POTATOES.

Any method by which the easy culture of early Potatoes can be accomplished is sure to be of service to those on whom there is a great demand for them early in the spring, and to that end the following paper aims. A method usually adopted for obtaining early Potatoes is to prepare a bed of fermenting materials in a pit, or to form one on which frames are laid, and after the soil within becomes warm, to plant the sets at once without any careful preparation. As a matter of course the Potato is soon at work, the heat from the bed forcing it rapidly, and at a season when much air-giving is seldom admissible; the consequence is too frequently an abundance of haulm, with a light crop of tubers.

I invariably obtain good crops of early Potatoes by potting some in 8-inch pots the first week in January, using a handful of fresh horse droppings over the crock, and light fresh soil for potting in. Having the set disbudded to one shoot, and giving the Potato a cut about an inch in length and depth at its base, I place the set low down in the pot. The pots can be stored in any structure affording a gentle warmth until the leaves break through the soil. By this time a slight hotbed is ready for them, the depth of fermenting materials being about 2 feet; on this is laid to the depth of 6 inches soil, which should be rough and light. On it the pots are placed for about a week or ten days, admitting air in abundance at all favourable opportunities. When the stems are 4 inches high, the plants are turned out of the pots and planted at distances of 18 inches by 1 foot, opening up the soil sufficiently to admit the ball to half its depth. The soil removed is then carefully worked round each plant, scarcely covering the roots. When the growth is 8 inches high, warm soil is worked in between the rows up to 2 inches above the original ball of earth, leaving the whole surface flattened. The plants seldom require water, the moisture arising from the bed being nearly sufficient for them. Give air at all favourable opportunities, covering well up on cold nights, but having constantly a slight amount of air. By the time the foliage commences to curl the Potatoes will be rapidly forming, after which scarcely any water should be given, otherwise it will materially interfere with their flavour.

The best variety for frame work, if steadily grown, is Myatt's Prolific, the tubers coming out very even in size, about 2 inches under the surface of the soil, and passing beyond the original ball of soil some inches.

I also find it serviceable to pot in 10-inch pots a quantity of the Cockney, an early dwarf-topped Potato, well adapted for pots, the tubers forming close at home, and being of good size. This is done in the first week of April, placing them in any unheated house or frame, and when fear of frost is past, a trench is then opened on a south border, in which they are placed, still remaining in the pots, over and between which the loose soil is carefully worked, leaving the mound of soil about 4 inches above the surrounding level. By this means I obtain an excellent lot of young Potatoes a fortnight sooner than from the open borders.—T. C. Sage.

GROWING DWARF POINSETTIAS.

When the Rev. C. P. Peach is trying his experiments with the dwarfing of Poinsettia pulcherrima, as I see he intends to do next year, may I ask him to try the plan of growing four plants in a pot, and flowering them as dwarfs? If he succeeds, of which I have no doubt, I think he will be highly pleased. I have not yet had the opportunity to do more than try two or three pots, and these gave me satisfaction. They were so very handsome and effective when placed in a row with the Single White Roman Hyacinth, and edged with small plants of Sela-

ginella denticulata, that I have decided to grow more of them when convenient.

My plan was to take the points of the medium-sized blooming shoots, and make them into cuttings about 4 inches long, taking off the bottom leaf only; to place each cutting in a very small pot, say a 72, or 2-inch pot; and to strike them in a brisk bottom heat and a moist, close atmosphere. Afterwards I put four of these cuttings in a 6-inch pot; the tallest in the centre, potting it rather higher than the others, and three round the sides. Place the latter slantingly and equidistant. I used a rich turfy loam, a handful of rotten cow manure, and sand. I kept them in close quarters until established, and then allowed them more light and moderate air. They cannot grow tall with such moderate-rooting space, but instead of that the nourishment the plants take from the soil will not only give the foliage a good colour, but will develope as fine a lot of floral leaves as can well be wished for, and the pot and plants will not, perhaps, exceed I foot high. The cuttings, I think, should be selected just as the shoot has ceased growing, and is about to form its tiny floral bracts.—T. Record.

GROUND VINERIES.

I have read much and heard much for and against ground vineries, and one Journal went so far as to say that they were unworthy the attention of gardeners, excepting for the growth of vegetables in winter, but they might do for amateurs. Even the inventor a week or so ago, in writing to "our Journal," said that he did not believe in them. However, being very fond of Grapes, and, moreover, being an amateur fruit-grower, I thought I would try some of them three or four years ago. So I wrote to Mr. Rivett to send me half a dozen of his pattern of ground vinery. On receiving them I saw it would be an improvement to do away with the groove for the glass to rest in, instead of which I made it to lap, and fixed with iron hooks, by which means I also got rid of the putty. I also strengthened the ends with a light iron cross-bar, and supported the ridge woodwork by bracing it to the lower wood on each side with a light iron bar. This prevented warping, which otherwise was apt to take place, and then the glass fell out. Instead of slates I paved the bottom with tiles, which I thought would hold both heat and moisture. To each Vine I allowed a growth of 21 feet—that is, three 7-feet lengths of lights.

The sorts I have planted are Black Muscat of Alexandria or Muscat Hamburgh, Foster's White Seedling, Lady Downe's, Frankenthal, Black Hamburgh, Black Hamburgh (Morris's variety), Early Golden Frontignan, General della Marmora, Fintindo, La Ville de Bruxelles, Golden Champion, Trentham Black, and a seedling of my own. Some of the Vines have fruited, others not yet, but I will give my notes of those that have.

Early Golden Frontignan bears well, and was ripe and of excellent flavour in the first week of September, both in 1869 and 1870.

Foster's White Seedling. This is a fine Grape, and succeeds remarkably well in a ground vinery. It was ripe in the middle of September.

Trentham Black did not set well in 1869, but set well in 1870. In colour it is jet black. Its flavour was all that could be desired. It was ripe in the last week of September.

General della Marmora is a free bearer, but I do not think much of the flavour. It is poor in quality, at least with me. This I shall dig up or graft.

Fintindo, a black Grape, loose in the bunch, and which does not require thinning, or at most very little. It is smaller in the berry than the Black Hamburgh, and not so good.

Frankenthal and Black Hamburgh both did remarkably well, were fine in colour and flavour, and were ripe in the last week of September and the first week of October.

Black Muscat of Alexandria was large in bunch and good in colour, and delicious.

Lady Downe's became black at the beginning of October, and was cut ripe on the 4th of November. A very free bearer.

Morris's Black Hamburgh I bought as earlier than the Black Hamburgh. I have not found it so, nor to my thinking is it so good in other respects as that variety.

The rest of my Vines I have not allowed to bear yet. As far as I have gone I deem my ground vineries a great success, as they supply me with excellent Grapes more than two months in the year with comparatively little trouble. Many of my friends, after seeing the Vines and tasting the produce, have taken the measurement of the frames and had some made, and are now growing for themselves. I do not pretend to say that the growth is equal to the fruit grown in my heated vinery, but I aver the Grapes are good and rich in flavour, equal to, nay better, in quality than many that I have seen grown in cool houses; and I would say to my brother amateurs, Try one Vine, such as the Trentham Black or the Frankenthal, and if you succeed as well as I have done, I think you will not regret the experiment. One word more, Do not have the glass less than 21-oz., and if the weather is very hot whiten the glass on the side next the sun.—Harrison Weir, *Weirleigh, Kent.*

CYCLAMEN CULTURE.

Before recording my experience on Cyclamen culture I wish to give this warning—with proper attention it is one of the most easy plants to cultivate, but without that it is one of the most difficult. I can assure Mr. W. Scott he can not only have good blooming plants in ten months, but in eight months useful ones with from two to ten dozen blooms, and I believe for general purposes from October till May they are not equalled, especially for London rooms.

For exhibition purposes, I think as a rule they should be shown in collections independently of size of pots, taking the quality of flower and foliage into consideration as the colours are so various, and perhaps in several collections of six or twelve they may be nearly all equal but different in colour.

I think in time a good Cyclamen will equal what our best Fuchsias are now in shape and substance of petal; good distinct-based flowers—that is my standard of excellence.

To have good plants in eight or ten months sow the seed any time after January, allowing eight or ten months according as the plants are wanted to bloom; 5-inch pots or pans will do. Sow about 1 inch apart in a gentle bottom heat. When the plants are up keep them as near the glass as possible, giving air gradually; and after this time they should have all the air possible, dependant upon the external temperature, and night and day during the summer months. As soon as they have made three or four leaves pot off the plants singly in small 60-sized pots, reshifting, as the roots find their way to the outsides of the pots, to large 60's, 5-inch, and 6-inch pots, returning them to the bottom heat, as they are very susceptible of any check, which will keep them on the standstill for a month or six weeks. The soil should be either warmed or the pots raised from the bottom heat two or three days before shifting. I do not recommend planting two or three plants in a pot, nor planting them out.

A frame is the best place in which to grow them during the summer months, shading at all times from strong sunshine; and as a good show of bloom entirely depends upon clean healthy foliage, the plants should be syringed at least twice a-day to preserve cleanliness, and to save the foliage from red spider, which appears to be their chief enemy.

Not later than September plants should be removed from the frames to a stage or shelf in the greenhouse or conservatory, as after that time they are subject to damp, maintaining just enough fire heat to expel frost and damp, and giving plenty of air without cold currents. If they are kept in a damp, close atmosphere whilst in bloom during the winter months, anyone can have spotted varieties to his heart's content, but such I consider a disfigurement.

After the blooming season place the plants in a cool pit or greenhouse, and gradually withhold water, but never allow them to become dust dry. After they have lost all or the greater part of the leaves, shake them out, repot, and return them to a cold frame, sprinkling twice a-day overhead, and watering at the root very cautiously at first, increasing the supply as the foliage increases. Return them to a stage in the greenhouse at the end of September. In two or three years good specimen plants can be had from 18 inches to 2 feet in diameter, with corms of from 4 to 6 inches.

The amateur may rest assured Cyclamens can be grown quite as well without bottom heat as with it. Sow the seed in October instead of in spring, place the pots on a shelf in a greenhouse near the glass, and grow the plants in a cold frame during the hot summer months.

I find the best compost is one-half good fibrous loam, and one-half leaf mould and well-rotted hotbed manure. Avoid cow dung, as it contains so many grubs, and should any be missed in the potting, they will completely destroy the plant, commencing with the roots and finishing at the corm.

A few words about the ten-months collection of plants exhibited at South Kensington by Mr. Clarke, of Twickenham,

well-known as one of the largest, most successful, and scarcely-equalled forced Strawberry-grower for maket. He forces some thousands of plants, and when in full work the fruit is a sight not seen every day, and probably he is able to gather from 50 lbs. to a hundredweight several times a-week. He consequently requires a large area of glass in frames and houses, and they are of the best form I have seen for the purpose. The Strawberries are first started in frames in bottom heat, and drafted to the houses as wanted. The Cyclamens then succeed them in the frames, and are grown in a gentle bottom heat during the summer, and removed to the houses in September, the Strawberries again following them for the winter. It must be understood his collection of Cyclamens was exhibited as a collection of about eighty or a hundred plants for quality and variety of colour, all in 48-pots, with from five to ten dozen blooms. Mr. Clarke's houses are now all filled with them, their number amounting to some thousands, all for market, in different stages of bloom, and, taking the whole as a lot of ten-months plants, I think they are not to be equalled. The plants in the early house, which is about 120 feet long by 12 wide, are now in bloom, and a sight worth going miles to see.—George Edgerton, *Strawberry Hill.*

[Mr. Edgerton sent us some fine specimens. Some of the flowers were semi-double.—Eds.]

RED AND WHITE EXHIBITION POTATOES.

Really it does seem like a reverse of history when a "Raleigh" comes to seek instruction from a "Fenn" relative to Potatoes. Yet so it is, and I beg to inform a correspondent —"Sir Walter Raleigh"—who wants "red varieties and white varieties, both Kidney and Rounds, for exhibition" purposes, that he cannot do better at the present time than to procure the Early American Rose, a flattish obtuse Kidney; and there is a rather early red round, rough-skinned Potato, which I often meet with wrongly shown as the Red Regent; it has various local aliases, but mostly bears the name of the Prince of Wales. If "Sir Walter" can secure it he will gain a fine model for a round red Potato, and well-flavoured, though it is yellow of flesh. The next shapely round, though a later and a larger sort, is Suttons' Red-skin Flourball.

Two models for exhibition, and really first-class second-early white Potatoes, are Thomas Almond's Yorkshire Hero, a flat obtuse Kidney, and Transell's Seedling, Round. I have grown the latter as large as my child's head, but that only happens when two or three tubers are found at one root, which often occurs in a breadth of this variety; and then I know of no other sort that produces such perfect spheres, unless it be the Royal Albert, but that is a smaller, and altogether an inferior kind to Transell's Seedling. It has always been a scarce kind, and should "Sir Walter" find it difficult to procure, there is the King of Potatoes, whose feature is to "run out" in sample, and it would give him both Rounds and Kidneys sufficiently large and shapely to suit. Rintoul's New Early White Don also yields very fine round tubers, and it is withal one of the best modern sorts, a capital market and household Potato.

I recommend the above sorts to be planted on good ground at the following distances apart between the rows:—Early Rose, 2½ feet; Prince of Wales, 3½ feet; Suttons' Red-skin Flourball, 3½ feet; Almond's Yorkshire Hero, 3 feet; Transell's Seedling, 2½ feet; and the New Early White Don, 3½ feet. —Robert Fenn, *Rectory, Woodstock.*

NOTES ON SILPHIUM LACINIATUM, *L.*

THE COMPASS PLANT.

[*Read before the Academy of Natural Sciences of Philadelphia.*]

It is at once the strength and the weakness of science that it takes little on trust. One would suppose that after the positive facts given by President Hill in his paper before the recent meeting of the American Association, there was no room for doubt that the edges of leaves of Silphium laciniatum had an average bearing north. But I find men—excellent acute observers—who doubt the facts. They say, "We took the trouble to examine the plants on the spot, and found not the slightest trace of any such tendency; we want no better evidence than that of our own senses."

As before suggested, it is an excellent habit to verify, for ourselves, the facts reported by others—there is far too little of this habit—but when the observations conflict, it is safer to assume that both are right, and that there is something yet undiscovered which would harmonise the opposition, than that either one is wrong.

In this matter of the Silphium or "Compass Plant," I was able to find this missing link, and to see that both parties were right.

When I first saw the Silphium to any great extent in its native localities, there was not the slightest indications of this northern tendency. It was a great surprise, as a limited knowledge of it before had taught the reverse. I determined to watch a plant carefully on my own ground the next year. The result was just as described by President Hill. There was the unmistakeable northern tendency in the edges of the leaves when they first came up, and until they were large and heavy, when the winds and rains bore them in different directions, and they evidently had not the power of regaining the points lost. This often took place by their own weight alone, especially in luxuriant specimens. Mr. Hill said it was in June when he saw them on the prairies, all bearing north; when I saw them, and not doing so, it was early in September, and then no doubt the mechanical causes I have referred to had been in operation.

The plant I have had in my garden, now for some years, affords much interest in many respects. I learned a useful lesson from it this year in reference to the relative rates of growth in the different parts of the inflorescence. Noticing that there appeared to be no growth in the disk florets in the day, I determined to note accurately, one morning during the last week in August, exactly when growth did commence. The ray flowers close over the disk during night, and at 4 A.M., with day just dawning in the east, I found the ray petals just commencing to open back. In the disk there are about fifteen coils of florets in the spiral. There appeared no motion until 4.40, although no doubt growth commenced at 4, when the ray petals were in motion, but too slow to be perceptible. At 4.40, however, the five outer circles were evidently slightly elevated above the others in the disk. Then follows the following record in my diary:—

4.45, the five divisions of the corolla split open.

4.50, corollas grown three thirty-seconds of an inch.

4.55, divisions of corolla fully expanded.

5, florets two-eighths above the rest of the disk. It might be well to say here, that there was no growth in any this morning but in the five outside rows we are speaking of.

5.5, 5.10, no apparent change except that some which were not so perfectly opened as the others seemed to become so.

5.15, pistil and masses of stamens slightly elevated above the level of the corolla.

5.20, corollas now about five-sixteenths of an inch above the others in disk. Pistils and stamens about two lines above the corollas. Long yellow ray petals half open, with no appearance of pollen on their pistils.

From this time forward there was no further growth of the corolla, so that this portion of the daily labour was accomplished in about three-quarters of an hour.

5.25, pistils and stamens beyond the corolla 1-32 inch.
5.30, " " " 1-16 "
5.35, " " " 1-8 "
5.40, " " " 3-8 "

5.45, 5.50, no change.

5.55, pistils begin to project beyond the stamens. The first insect, a sand wasp appears. He inserts his proboscis down between the clavate pistil and the stamens, carrying away the pollen, which is all over his head.

6, 6.5, pistils one line, stamens no longer lengthen.

6.10, anthers are falling away from the pistils, which are two lines beyond.

6.15, no change.

6.20, the ray petals now fully open, that is horizontal.

No change was noticed after this, except the free visits of the sand wasp, none of these however, carried any pollen to the pistils in the ray florets.

About 9 o'clock (there had not been the slightest indications of any growth since 6.20) heavier insects began to arrive, and then the slightest touch broke off the florets, which fell on the ray pistils which happened to be below them, and in this way they were fertilised. These pistils died very soon after. Those pistils on the upper side (the flower leaning a little) were quite fresh the next morning, awaiting some chance to be fertilised, insects evidently not performing that office.

We here see that there were three phases of growth, with a slight rest between each, the pistil taking the most time, then the stamens, and the corolla the least, but the whole growth of the day included within two hours.

I have used the word pistil for the clavate process which

occupies the place of the true organ in perfect flowers. Of course only the ray florets of Silphium have perfect pistils. This clavate false pistil or ovary has hitherto been supposed to be a necessary production for the fertilisation of the plant. It was supposed to push out the pollen, which was thereby scattered to the ray florets about it. But these observations show that this is probably an error, and that fertilisation is chiefly carried on by the easy falling away of the mass of stamens, as I have shown in a paper on Euphorbia jacquiniæflora in last year's proceedings, is the case with that species.

I am anxious to call particular attention to the different ratios of growth in connection with the appearance of the different floral organs in this plant; because I think I see traces of a general law in plants that there are vibrations or varying intensities during each season's growth, and that the production of the various organs depends on the degrees of these vibrations.—Thomas Meehan.—(*American Gardener's Monthly.*)

GRAPE GROWING IN SCOTLAND.

Scotland has of late years taken a leading position in the production of Grapes. This was first demonstrated at the Great Exhibition of Fruit held in Edinburgh in 1865, where many of the leading Grape-growers of Britain, and even France, put in an appearance, yet first honours were retained in Scotland. Again, in 1869, we had another Grand International Exhibition in Edinburgh, when the triumph of the Scotch growers was as marked as before.

These remarks, however, refer more particularly to Grapes grown in the gardens of the great of the land, and not to such as are grown for commercial purposes. We have, however, to notice a notable step in advance in this latter direction also in Scotland. Some four or five years ago, Mr. Lindsay, of Dryden Bank and Physic Gardens, Edinburgh, who is a most extensive importer of every description of green fruit, built at his country residence two splendid vineries, each 160 feet long and about 18 feet wide. These are built on what may be called the lean-to principle. Their construction and heating are of the most substantial character. Their borders were formed after the most approved method, and the results have been highly satisfactory—the crops of Grapes having given ample evidence that the foundation was well laid, and the after-management all that could be desired. We believe Mr. Thomson, of Dalkeith Park, was the architect of Mr. Lindsay's vineries, and we are going to refer to what he is now doing in the same direction for himself in Selkirkshire, where he has feued land near the Clovenfords Station of the railway leading from Galashiels to Peebles, about three miles from Galashiels and one mile from the classic grounds of Ashiestiel, where Scott wrote the greater portion of "Marmion," and from which he dates many of the introductions to his cantos. We believe Mr. Thomson selected this spot because of the excellence of the soil for Grape-growing, the supply of water, and the facility with which the fruit can be sent on to London by express trains from Galashiels. He has named his establishment The Tweed Vineyard, but Grapes are not the only fruit he means to produce; he has made arrangements for fruiting about a thousand Pines annually, besides Melons, Cucumbers, and other fruits. It is but a year since he got possession of the ground, and those who have seen the place recently can only marvel at what has been done in so short a space of time. Hothouses have been erected requiring thirty tons of glass to glaze them, and three miles of hot-water pipes to heat them.

The great central blocks of glass for the production of Grapes consist of three span-roofed houses, each 200 feet long, 24 feet wide, and 17 feet high. These are placed 24 feet apart, and parallel to each other, terminating at one end in a house running along their ends and forming a corridor for them; this corridor is of the same height, 135 feet long, and 25 feet wide, and in it are placed all the appliances by means of which the ventilation of the whole block of glass is effected; it is interesting to observe that this is done in as little time and with as great ease as an ordinary three-light frame, such is the perfection of the gear employed. Two of the long houses have eight rows of pipes in each, one has twelve rows, and the corridor has ten rows. This, with some connecting pipes, gives 7000 feet of 4-inch pipe, which is all heated by one boiler, of an entirely new construction, which Mr. Thomson has had constructed of boiler plates. It might be called the telescope boiler, for it is some 20 feet long. The Vines are all of the most approved sorts.

In addition to this grand block there is a pinery 120 feet long and 13 feet wide against the boundary wall; another 145 feet long and 13 feet wide; a third 200 feet long and 5 feet wide along the front of a Cucumber house of the same length and 13 feet wide. In addition to these there is a Pine pit in course of construction 200 feet long, and a plant house 100 feet long. The Cucumber house, it is calculated, will produce in four months three hundred dozen fruit—more, probably, than is consumed in Scotland in a whole year.

The Vines with which the vineries have been planted were all struck from eyes and grown on the spot, and they have made such progress that about 3000 lbs. of Grapes may be expected from them next summer by cropping a set of Vines called supernumeraries, which will be removed when the permanent ones completely occupy the houses. Such extensive preparations for supplying the market with Grapes, when taken in connection with many similar establishments that exist, especially in England, must of necessity diminish the cost price of hothouse Grapes, and bring them within the reach of a class of the community from whom their cost hitherto has excluded them; and in this we rejoice, especially when we consider what a boon they must be to invalids and all who are of delicate constitutions, proving to them both food and drink when they often loathe everything else.

We learn that Mr. Thomson has resigned the situation he has held for so many years as gardener to his Grace the Duke of Buccleuch at Dalkeith, and in May will take the personal superintendence of The Tweed Vineyard. Mr. Thomson is well known to be the highest authority on Grape cultivation in this country, and in the foremost rank as a practical cultivator. The important enterprise now undertaken on the banks of the Tweed could not have been inaugurated under more auspicious circumstances.—(*Daily Mail*)

SLOW COMBUSTION—ECONOMY OF FUEL.

For "A. Y.'s" information (see page 8) I may state that the valve is fixed on the ashpit, and not on the furnace door, and that both doors fit quite closely. Although the valve answers admirably, yet I quite agree with Mr. Fish that a single hole with a screw valve would be preferable to my sliding valve, as I think it could be more accurately regulated. I had an opportunity only last week of observing the working of one in a close stove in a large warehouse, and saw at a glance that it was preferable to my sliding valve. Nevertheless, I have no fault to find with my present plan. It has been fairly tested during the present severe frost, and it has proved to be all I could desire in its results.

It was only the other day that the builder (a nurseryman) who constructed my house called, when I asked him to look at the furnace. Upon seeing the fire he immediately remarked, "That's capital; it is perfect; you cannot want anything to work better." It was then half-past 9 A.M., and the fire had been made up at half-past 8 the previous night, and had consequently been burning for thirteen hours, and still was a good fire. The thermometer showed at the time 16° of frost in the external atmosphere. The glass inside the house stood at 40°.

The fire was made up last night at a quarter-past 9; at half-past 9 this morning there was still a good fire. The thermometer inside the house marked 45°. The frost during the night had not exceeded 4°. I mention these particulars to show how the plan has worked during this severe weather.

In stating the quantity of fuel used to burn the length of time I have mentioned, I will give my experience as correctly as may be. I cannot give the quantity of coal, but "A. Y." will probably be able to form a tolerably accurate estimate. He must bear in mind that I use a tubular boiler of the smallest size, and that I burn anthracite coal only. The boiler is fixed about 6 or 7 inches above the firebars, and the diameter of the furnace below the boiler is about 21 inches.

When I make up the fire for the night I fill up to about 4 inches above the bottom of the tubes in the inner circle of the boiler. The fire in the space between the outside of the tubes and the brickwork is below the boiler; the fuel, in fact, forms a flat-topped cone-shaped mass. Were I to fill up higher than I have stated, the heat would be too great. My consumption of coal is as nearly as possible half a ton per month. I may add that since I have used anthracite coal I have never been troubled with clinkers; the firebars are always clear.

I should, perhaps, mention that the inside course of brickwork in the furnace is made of firebricks.

I hope this information may be of use to "A. Y." He must

remember that I only give the result of my experience with one kind of boiler and one description of fuel. I do not pretend to state that similar results would follow with different materials to work with. I merely give my experience, and how obtained.

From observation I am disposed to think that if I had to construct another furnace I should make the space greater between the boiler and the firebars; instead of 7 I would make it 12 or 14 inches, contracting the sides towards the bottom. By this plan, as the fire burnt out, it would drop closer together, and keep burning, instead of going out, as it does in broad-bottomed furnaces. The quantity of fuel consumed would not be greater than, probably not so much as in the ordinary way of setting furnaces.

I remember the old-fashioned circular-bottomed stoves used in bedrooms. As the fuel burnt the fire dropped down closer, and kept bright for a long time; whereas, with the modern broad flat-bottomed stoves, the fuel is soon burnt right out. If something like the principle of these old-fashioned grates were applied to greenhouse furnaces, making them for slow combustion, as great or greater results would be obtained with less trouble and a smaller consumption of fuel.

Does Mr. Fish think a screw-valve in the fireplace would be an improvement?—R. S.

GROUND LEVELLING AND PRACTICAL GARDEN PLOTTING.—No. 11.

DRAWING PLANS.

To draw and transfer *fig.* 34 to the ground, form the rectangle A B C D; draw the diameter lines E F and G H, also the diagonal lines A C and B D; draw the other lines 1 2, 3 4, &c. (being parallel to either diameter or diagonal lines); draw the circle from centre O, also the arcs as shown in *c* and *d*.

To transfer the figure to the ground, lay a line from A to B, the distance being 41 feet 6 inches, also from B to C, being 62 feet; lay the line from C to D, which is equal to line A B, lay the line from D to A, which is equal to line B C; insert a stake at each point. Lay the diameter lines E F and G H, insert a stake at each point; also lay the diagonal lines A C and B D. From the stake at point A measure 2 feet on line A B, insert a peg as at point 1; also from stake A measure 2 feet on line A D, and insert a peg as at point 23. From stake B measure 2 feet on line B A, and insert a peg as at point 11; also from stake B measure 2 feet on line B C, and insert peg as at point 24. From stake C measure 2 feet on line C B, and insert peg as at point 14; also from stake C measure 2 feet on line C D, and insert peg as at point 12. From stake D measure 2 feet on line D C, and insert peg as at point 2; from stake D measure 2 feet on line D A, and insert peg as at point 13. Lay lines connecting peg 1 2, 11 12, 13 14, and 23 24. On each side of the diameter line E F measure 18 inches, and insert pegs as at points 17 18, 19 20. From the stakes at points E F on each side measure 3 feet 6 inches, and insert pegs as at points 15 16, 21 22. Lay lines connecting pegs 15 16, 17 18, 19 20, and 21 22. On each side of diameter line G H measure 18 inches, and insert pegs as at points 5 6, 7 8. From the stakes in points G H measure 3 feet 6 inches, insert pegs as at points 3 4, 9 10. Lay lines connecting pegs 3 4, 5 6, 7 8, 9 10. On each side of the diagonal lines A C and B D measure 2 feet, as shown in points C and D; extend line B A to *b*, which is 2 feet, insert a peg as at point *b*; extend line D C to *a*, and insert a peg as at point *a*; lay a line from peg *b* to the peg at point 12, and from the peg at point 1 to the peg at point *a*. From stakes B and D find corresponding points to *b* 12 and 1 *a*; lay the corresponding lines. Extend the line A B to *u*, which is 4 feet 3 inches, and insert a peg as at point *u*. From the stake at point B measure 4 feet 3 inches on line B A, and insert a peg as at point *r*. Extend line C D to *s*, which is 4 feet 3 inches, and insert a peg as at point *s*. From stake D measure 4 feet 3 inches on line D C, and insert peg as at point *t*. Then lay a line from peg *r* to peg *s*, and from peg *t* to peg *u*. From the stakes at points A C find the corresponding points to *r s* and *t u*, and lay the corresponding lines. From the centre, with a string 9 feet 6 inches long trace arcs c, c, c, c; reduce the string 2 feet, and trace arcs *d*, *d*, *d*, *d*, *d*, *d*, *d*, *d*; reduce the string 3 feet, and trace the circle 9 feet in diameter. Lay lines to the arcs (with pegs as before described), also to the circle, which com-

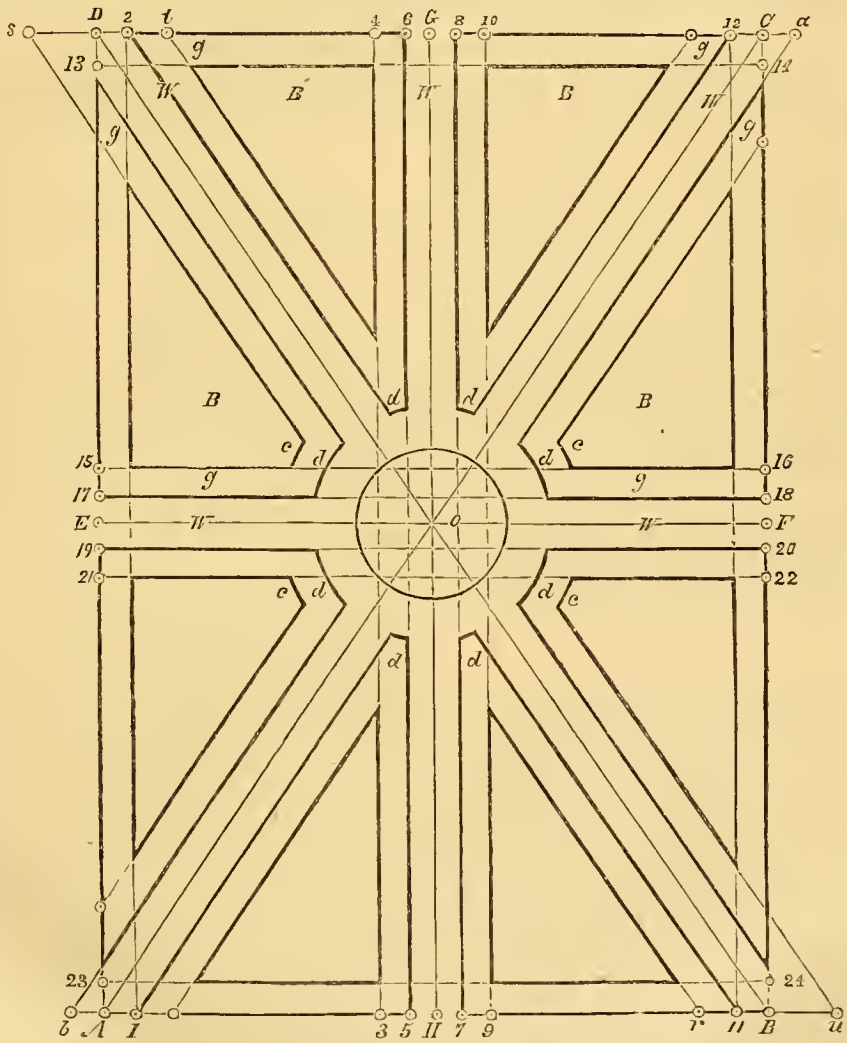


Fig. 34. Scale 12 feet to the inch.

plete the figure. The points where the lines cross each other are the angles of the beds and grass verges. B, beds; *g*, grass; W, walks.—M. O'Donnell, *Gardener to E. Leeming, Esq., Spring Grove, Richmond.*

ORNAMENTAL VARIETIES OF OUR NATIVE PLANTS.

I have been looking out amongst our British plants for ornamental and variegated forms, or any departure from the normal condition, with a view to selecting such as may be thought worthy of a place in our gardens. I have been rewarded with many interesting varieties of Grasses, Veronicas, Lamiums, Glechomas, &c. The variety of Malva sylvestris called crispa must become a favourite winter-garnishing plant, as I see the French Mallow is cut-up with the frost, and my Mallow will stand any amount of cold without injury. The Grass, which I think is Poa annua, is considerably shorter in its growth and flower stems than Poa trivialis argentea. I have also a new Dactylis glomerata, the whole foliage assuming a creamy-white tint in the spring, but not so good in the summer, and a Phleum pratense aureo-variegatum, which is very ornamental during the summer. I was the raiser of Bull's Holcus lanatus variegatus, Alopecurus pratensis variegatus, and Phleum pratense albo-marginatum; also Henderson's Lamium aureum, and Thymus citriodorus aurens, and a new variety of Sedum acre, and of Helianthemum vulgare, to be sent out by a London firm as soon as sufficient stock shall have been raised.

My stock of new British plants comprises some one hundred sorts of greater or less merit, and I can assure you that my wanderings in search of novelties have been a labour of love. Some of these plants have been propagated from the most trifling beginnings. The Mallow, for instance, I discovered on the wayside at Old Charlton, Kent, with only one curly leaf upon the plant. I dug it up, potted it, and it produced another curly leaf or two, all the rest of the foliage being perfectly plain. I gathered the seeds from the side of the shoot with the curly leaves, and they produced a progeny with some plants all curly, some all plain, and some partly curled; but the parts of partially-curled plants that were curled were as well curled as the plants that were all curled, and I find that the all-curled plants come perfectly true from seeds. Being very prolific it will make a cut-and-come-again garnishing plant from the autumn till late in the spring, when it loses all its crispness and cannot be distinguished from the normal state till the autumn again comes round.

I have also a new gold-striped Lily of the Valley, and several beautiful forms of Arum maculatum—viz., aureo-marginatum, and albo-marginatum.

My plants are all original and collected by myself, and although there have been varieties of variegated plants, such as Glechoma and Veronica, found before, there are in every fresh one differences which are very interesting.—Wm. Elliott.

[We hope to hear often from Mr. Elliott on this subject.—Eds.]

THE METROPOLITAN FLORAL SOCIETY.

It will, I am sure, interest some of your readers to know what progress we are making in our attempt to bring more prominently into notice those favourites, yclept florists' flowers, which we believe have been too much shoved out of the way by things more easily managed, but, we think, not half so beautiful.

I need not say that there was an immense difficulty in organising a new Society; for many would be ready to imagine that it was the result of spleen, and, as I had had a pretty continuous fight with the existing Societies (especially with the Royal Horticultural Society, on what I honestly believed to be blunders and mismanagement), that in a spirit of opposition I had originated this movement. As I felt perfectly at ease on this score I did not much care what some might think, so long as the point we had in view was gained. The liberality with which our advances were met by the Crystal Palace Company, and the kind thoughtful manner in which the arrangements were carried out by Mr. Wilkinson, tended to make our first show the most successful autumn exhibition ever held in the metropolis. Thus encouraged we have made another move. We felt that it would never do to originate separate exhibitions—that would have had the appearance of opposition; moreover, we could not have made them sufficiently attractive, and we could not run the risk of failure. We therefore felt that it would be better to connect our prizes with some existing machinery. The months in which we proposed to offer prizes were April for Auriculas, May for Tulips and Pansies, June for Ranunculuses and Pinks, and July for Carnations and Picotees. In the first and last of these months it was decided that it would be desirable to connect our exhibitions with the Royal Horticultural Society, and in May and June we felt that there was no choice left, as the Crystal Palace Company had offered to help us materially in our prize list. Communications were opened with the Council of the Royal Horticultural Society, and arrangements were made advantageous to both. The Royal Horticultural Society will gain the advantage of having, we hope, an attractive addition made to two of their minor shows, while we shall gain a place to exhibit our flowers where they will be seen by many lovers of flowers.

These preliminaries having been arranged, a meeting of the Committee was held at St. James's Hall on Tuesday the 3rd inst. to determine what was to be done. The Committee felt that it would be very unwise to venture too much. Societies are often vigorously taken up at first, and then people cool on them; and if plans are arranged on the larger scale, then there comes the necessity of clubbing together to pay debts—a most unprofitable proceeding. Hence if the schedule of prizes agreed upon may seem to be small after so much talking about them, let it be remembered that our motto is "*festina lente*," freely translated, "Slow and sure goes far in a day."

I should add that the Royal Horticultural Society have consented to the Society having their own judges. We propose, therefore, to offer the following prizes to be competed for by members of the Metropolitan Floral Society alone:—

In April—6 Auriculas (amateurs)	£2,	£1,	10*s.*
1 do. Green edge (open)	7*s.* 6*d.*,	5*s.*,	2*s.* 6*d.*
1 do. Grey edge (open)	7*s.* 6*d.*,	5*s.*,	2*s.* 6*d.*
1 do. White edge (open)	7*s.* 6*d.*,	5*s.*,	2*s.* 6*d.*
1 do. Self (open)	7*s.* 6*d.*,	5*s.*,	2*s.* 6*d.*
In May—36 Pansies (open)	£2	£1 10*s.*	£1
24 do. (amateurs)	£2	£1 10*s.*	£1
12 Fancy Pansies	£1	15*s.*	10*s.*
36 Tulips (open)	£2	£1 10*s.*	£1
12 do. (amateurs)	£2	£1 10*s.*	£1
In June—24 Pinks (open)	£2	£1 10*s.*	£1
12 do. (amateurs)	£2	£1 10*s.*	£1
24 Ranunculus (open)	£2	£1 10*s.*	£1
12 do. (amateurs)	£1 10*s.*	£1	10*s.*
In July—12 Carnations (amateurs)	£1 10*s.*	£1	10*s.*
12 Picotees (amateurs)	£1 10*s.*	£1	10*s.*

The prizes offered at the autumn show will be on the same liberal scale as last year. Having thus explained our present position, I hope that we shall receive such additional encouragement as will enable us another season to place a more liberal scale of prizes for the florists to compete for. Our object is not only to encourage those who already cultivate florists' flowers, but also to induce others to attempt or recommence their culture.—D., *Deal.*

A MAMMOTH BLACKBERRY ORCHARD.

One of the most interesting calls we have made this year was to the great Blackberry patch of John S. Collins. The following, from the *Practical Farmer*, gives an excellent idea of things as we saw them.

We visited about the middle of the past month, approaching but not quite at the height of the picking, the large Blackberry patch of our friend, John S. Collins, near Merchantville, New Jersey, about four miles from Camden. It comprises seventy-five acres, all planted in Blackberries, and now bearing profusely, but far yet from being up to its maximum production. They were planted mostly three and four years ago.

The day of our visit, 7000 quarts had been picked; 14,000 quarts were fully expected the day following, which would be a full day's work for the hands employed, who, when we saw them, were quietly resting or lounging about under the shade of trees, and recruiting for the morrow—7000 quarts being about half a day's work. A visitor to this patch would at once be satisfied that there is many a homely adage less truthful than the very trite one, "as plenty as Blackberries." Here were seventy-five acres occupied with nothing else than Blackberry plants—thousands of the bushes bending nearly to the ground under their weight of fruit. The rows were 8½ feet apart, and the plants 4 feet to 4½ in the rows. The tillage had been excellent, no weeds at all to be seen, for the simple reason, we presumed, without asking the question, that the berries brought a better price in the market than weeds, and the proprietor, being essentially a practical man, had given the strength of the soil and the labour of cultivation to the crop which brought in the most

money. People's mental organisations differ widely, as also their reasoning processes and conclusions. This was indicated by a field adjoining the Blackberries, where the owner had evidently concluded that the crop for him to raise was "mullens." We have seen no "mullen" crop equal to them this season, and think we never saw a better one anywhere. They have grown 6 feet high, without any expense of cultivation. The inference we drew was, that a "mullen" soil was also favourable for Blackberries.

By far the largest portion of the Blackberries were the variety known as Wilson's Early. This seedling, of a few years since, ranks in importance with the Philadelphia Raspberry. It is the best Blackberry out, has been tested thoroughly, differs from the Lawton in being ripe when black, is of good size, melting, and juicy, which, with its earliness, being the first in the market and treading closely on the heels of the Raspberry crop, always secures the best price.

J. S. Collins was receiving 20 cents per quart, wholesale price, at the time of our visit, which, with 14,000 quarts, make the round little sum of 2800 dols. for one day's picking. Can the "mullen" grower show as large a record?

One of the most interesting features of the business, to us, was the quiet, thorough, and systematic manner in which everything was done. Each row had a marked stake at the end. Hand A undertakes to pick rows 55 and 56—was so marked by the clerk in his book, and they were required to pick them clean, and to go back if they were not so. The price paid for picking was 1½ cent per quart, and a constant supervision being exercised over the work, the hands soon discovered it was easier to pick a row thoroughly than to have to go back. Very few cases occur where they are so continually careless as to require to be discharged. The average is 100 to 150 quarts per day to each hand, but they sometimes run up to 200 quarts per day.

While a harvest was being evidently reached by the intelligent and far-seeing projector of this Blackberry patch, it was also no less a Blackberry festival for the hands employed. On inquiry where they were from, we were surprised to find them to have come mostly from that aristocratic (?) portion of Philadelphia, Bedford Street. Is it possible, thought we, thus to utilise Bedford Street? Here were one to two hundred hands employed, of what is known as the very scum of creation, men with their wives and children, gathered about in clumps; and in passing among them, we did not hear a profane or improper word, all quiet and orderly. The change from damp and crowded cellars and filthy dens and alleys, to the green grass and pure air and beautiful trees of the country, where all Nature was pleasant, and the birds sang merrily, most evidently impressed and reached the latent spark of these depraved specimens of humanity. As they stay over the Sabbath, what a place and an opportunity for those rightly qualified to give religious labour for operating on such a class.

As the filled boxes are brought up to the clerk, 3-ct. or a larger denomination of tickets are given out, which are always good for the money whenever asked for. The ticket system undoubtedly induces them to save till toward the end of the season.

A large open shed is erected, with rough tables and benches, which may be called the restaurant, where plain meals are cooked, and provisions sold, of course with the entire absence of intoxicating liquors. The barn as well as shanties erected about, are used to lodge in; and there can be no doubt the hands return, when the season is over, improved in mind, body, and estate.—(*American Gardener's Monthly.*)

THE CANDELABRA-FLOWERED LARKSPUR.

I DO not very much affect annuals, although some of them are remarkably handsome, but one was sent to me last year by Messrs. Dick Radclyffe & Co. under a name quite sufficient to deter anyone from growing it—Delphinium Consolidum candelabrum flore-pleno. However, I tried it, and can conscientiously recommend it as one of the prettiest things I know in its way. It is dwarf, and the arrangement of the branchlets is exactly like that of a candelabrum. They go out horizontally from the stem, and then the flower stands up in a perpendicular position. It is of various shades of colour, and altogether it is a very great addition to our pretty annuals.—D., *Deal.*

FROST AND SNOW IN NORFOLK.—Snow 1 foot deep. The thermometer (Negretti's) registered on December 24th, zero; on December 25th, 4° below zero. The thickness of the ice on the lake on December 26th was 5 inches. This is the coldest weather we have experienced here since December 25th, 1860.—WM. SMYTHE, *The Gardens, Elmham.*

PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

ONCIDIUM TIGRINUM *var.* SPLENDIDUM (Splendid Tiger-marked Oncid). *Nat. ord.*, Orchidaceæ. *Linn.*, Gynandria Monandria.—Native of the Irapæan Mountains, Mexico. Flowers pale yellow striped with brown.—(*Bot. Mag.*, *t.* 5878.)

PAULLINIA THALICTRIFOLIA (Thalictrum-leaved Paullinia). *Nat. ord.*, Sapindaceæ. *Linn.*, Octandria Trigynia.—A stove climber with graceful Davallia-like leaves. Native of Rio de Janeiro, Brazil.—(*Ibid.*, *t.* 5879.)

ARISTOLOCHIA DUCHARTREI (Duchartre's Birthwort). *Nat. ord.*, Aristolochiaceæ. *Linn.*, Gynandria Hexandria.—Native of the Upper Amazons. Flowers cream-coloured, thickly blotched with reddish brown.—(*Ibid.*, *t.* 5880.)

HÆMANTHUS TENUIFLORUS *var.* COCCINEUS (Crimson Slender-flowered Hæmanthus). *Nat. ord.*, Amaryllidaceæ. *Linn.*, Hexandria Monogynia.—Native of Abyssinia. Flowers crimson.—(*Ibid.*, *t.* 5881.)

ASYSTASIA VIOLACEA (Violet-coloured Asystasia). *Nat. ord.*, Acanthaceæ. *Linn.*, Didynamia Angiospermia.—Native of Concan, western Peninsular India. Flowers pale purple with white border.—(*Ibid.*, *t.* 5882.)

PEAR—*Brockworth Park.*—"Messrs. J. C. Wheeler & Son, of Gloucester, have acquired the stock, and it was obtained by them from Mr. Lawrence, of Brockworth Park. It is, as we understand, a seedling raised at that place, one of its parents being the well-known and highly-esteemed Louise Bonne of Jersey.

"The Brockworth Park Pear is a fruit of large size, the specimens figured measuring 6½ inches in length and 9½ inches in circumference. Its form is oblong-pyriform, blunt and rather unequal at the base, with a stout obliquely inserted stalk about an inch long, set in a shallow basin, and having a small closed eye, with prominent pointed calyx segments. The skin is smooth, pale greenish yellow, slightly dotted, and with a delicate irregular tinting of red on the exposed parts. The flesh is very tender, fine-grained, and melting, with abundant rich vinous juice, the flavour very much resembling that of its parent, the Jersey Louise Bonne; but the fruit is much larger and handsomer than in that variety. It comes into use about the middle or end of September.

"The tree is described as being hardy, of ornamental growth, and a very free bearer, young pyramids each producing as many as twenty fine Pears. When grown against a wall the fruits are said to average 12 ozs. in weight. Altogether we have here, in the words of one of our leading pomologists, 'a new Pear of the highest merit, taking rank with the finest of our old-established varieties, and one which, extensive as our list of good Pears already is, must yet be added to our collections.'"—(*Florist and Pomologist*, 3 s., iv. 1.)

NOTABLE PEARS.

AUTUMN JOSÉPHINE.—A seedling from Joséphine de Malines. This fine Pear rivals its parent in all its excellencies, and differs only in the season at which it ripens.

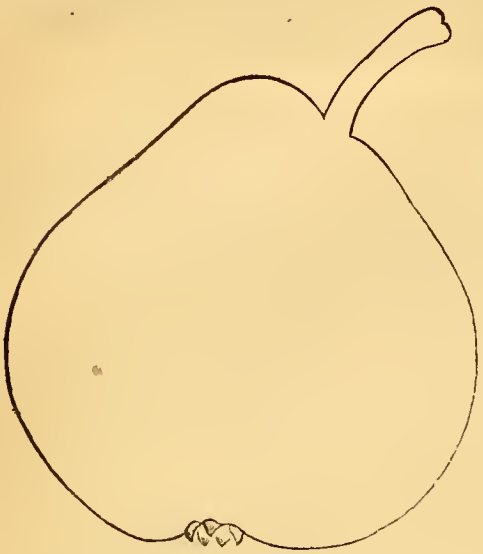
The fruit is even and regular in its outline, turbinate, and somewhat flattened at the crown. The skin is greenish yellow when quite ripe, and strewn with patches of thin pale brown russet, and with a russet patch round the stalk. Eye open, with short erect segments, and set in a shallow depression. Stalk three-quarters of an inch long, woody, and inserted without depression. Flesh yellowish, with a pale salmon tinge, like that of Joséphine de Malines, tender, fine-grained, and very juicy. Juice rich, sugary, and with a fine aromatic flavour.

A fine Pear, ripe in the middle of October, and lasting about a fortnight.

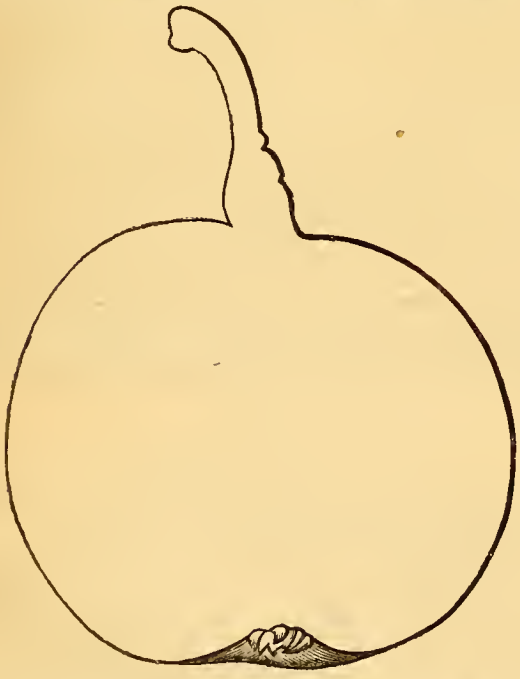
This valuable native acquisition was obtained from seed by W. E. Essington, Esq., of Ribbesford House, Bewdley. The seed, which was obtained from Joséphine de Malines, was sown in the year 1856, and scions from the seedling were grafted on the stock of a worthless Pear tree, which had been cut down in 1861. The tree is an excellent grower, and has formed a large head, bearing two bushels of fruits, and it first produced fruit in 1869

Cassante du Comice.—Fruit roundish, or Bergamot-shaped, a little uneven on its surface. Skin of a dull yellow ground colour, considerably covered with rough brown russet, which leaves large patches of the ground colour visible. Eye partially closed, with incurved segments, and set in a considerable depression. Stalk 1¼ inch long, curved, and with a large swollen fleshy base, the upper part woody. Flesh yellowish, coarse-grained, crisp, and very juicy, with a rich, sweet, sugary juice.

A first-rate dessert Pear, ripe in the last week of September.



Autumn Joséphine.

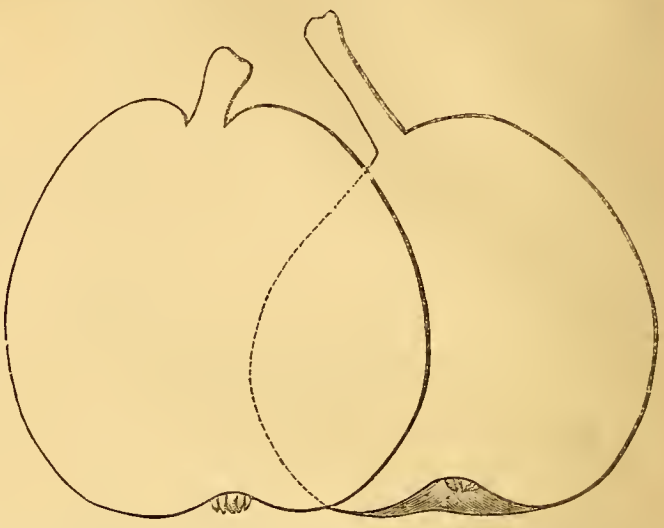


Cassante du Comice.

This was raised by the Horticultural Society of Angers, and I received it from M. André Leroy of that city.

Gansel's Seckle.—Though one of the very best of our native Pears, this is one which is little known and very seldom met with. It is one of the seedlings of the late Mr. Williams, of Pitmaston, to whom we are indebted for so many excellent new fruits. It was obtained by crossing the Seckle with Gansel's Bergamot, and hence its name.

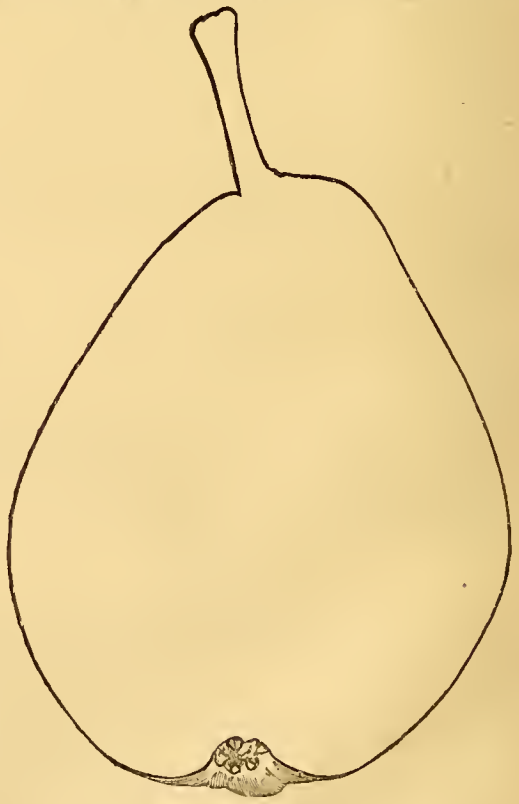
Fruit not unlike the Seckle in shape, and also with much of the character of Gansel's Bergamot on a small scale. The skin has a solid bright crimson cheek next the sun, which shades off to yellow on the opposite side; the shaded side is covered with a thin smooth crust of cinnamon-coloured russet, and the crimson cheek is strewed with distinct dots of grey russet. Eye small and closed, with erect acute segments, set in a narrow and considerable basin. Stalk generally short and stout, but sometimes three-quarters of an inch long, inserted in a narrow and rather deep cavity. Flesh yellowish, rather coarse-grained and gritty, with a sweet, abundant, and very richly-sugared juice, and a high perfume, but not so much so as in Seckle.



Gansel's Seckle.

A first-rate Pear, ripe in the beginning of November.

Maud Hogg.—The fortunate raiser of that excellent Apple Mannington's Pearmain has been equally successful in raising a number of seedling Pears, some of which will, we have no doubt, become established varieties in British gardens. A native of the Weald of Sussex, where no more uncongenial soil and climate for delicate varieties of fruits could be found, this new



Maud Hogg.

gain of Mr. Manningtou's, which we now describe, has proved itself to be an autumn Pear of great excellence.

The fruit is above the medium size and oblong-obovate. The skin is entirely covered with a crust of warm brown russet like that of the Brown Beurré, and has a slight orange glow on the side exposed to the sun very much like the Chaumontel; there is no yellow or ground colour visible. Eye open, with very short segments, and set in an irregular ribbed depression. Stalk an inch long and rather slender, inserted without depression. Flesh yellowish white, tender and buttery, very juicy, sweet, and richly flavoured.

A dessert Pear of the first quality. In use from the end of October and beginning of November till December.

The seed was sown about sixteen years ago, and the tree has borne fruit this year for the first time.—(*Gardeners' Year Book*, 1871.)

WORK FOR THE WEEK.

KITCHEN GARDEN.

Where there is a family of taste to be supplied, perhaps no department requires more energy and forethought than this, because the demand is constant throughout the year. We have not only to look at present wants, but must have regard to the future. Now is the time to do so. Manuring and trenching as fast as the crops are cleared off will still be the principal work here; turn over compost heaps during the frost, and procure a fresh supply if needful. Draining—an important matter in flat damp situations—should be done when opportunity offers. A well-drained garden is generally a productive one. If Box edgings are used, repair them if necessary in open weather. If they have grown large and unsightly, reduce them by relaying. This is done by clearing away the gravel, &c., digging the ground, picking out any stones or roots of the old Box, then treading the soil firm, levelling with the spade, cutting out a neat line, and placing the Box (after reducing it to small plants), in the opening, leaving an inch or two above ground. Make the soil level over the roots, and level the gravel to it, keeping the rough part downwards, and making smooth and firm on the surface. Large edgings are unsightly and shelter snails, &c. Every vacant space should be turned up to expose the soil to the action of the weather, either by trenching and laying it up in ridges, or by deeply digging and laying it up in the same way. If manure cannot be dug into the ground, rather than have it wasted by exposure, throw a covering of earth over the surface to prevent evaporation till it can be used. If snow should be on the ground, it should not be dug in, as it would keep the soil cold and wet for a long time. See that previous directions are carried out; if not, embrace the first opportunity when the state of the soil will admit. It is bad policy to tread upon trenched ground when saturated with wet, and the delay of a day or two will often be found a gain. To guard against possibilities, sow in pots or boxes, or on strips of turf, a moderate quantity of early *Peas* and Long-pod *Beans* for transplanting. Place them in a vinery at work, or a house where there is a gentle heat, and when about an inch high remove them to a cold frame secure from frost to be hardened off. Sow *Onions* in a warm corner for early spring use, and plant out small ones of last year's growth for the same purpose, and to bulb for kitchen use. Plant out *Shallots* and *Garlic* in light rich soil. Draw a small drill and fill it with charcoal dust or charred refuse, and lay the bulbs on it, but do not cover them; they will by-and-by require a slight pressing down. See that the fermenting material round *Sea-kale* does not become too hot; begin in time, and give it a slow gentle heat or you will have it as weak as straws. Cover up a succession, taking care to place pots or a substitute over the crowns to keep it apart from the fermenting matter, for notwithstanding covering with leaves and ashes without pots, nothing seems to entirely do away with the earthy flavour which it thus acquires. *Spinach* appears to have suffered much from the frost; let all decayed leaves be carefully removed, and the ground stirred the first opportunity. Keep a succession of *Small Salading* sown in pots or boxes, and attend to the protection of *Lettuces*, *Endive*, *Radishes*, and *Cauliflowers* in severe weather.

FRUIT GARDEN.

If not done in the autumn prepare and wheel in soil for fruit trees which are to be removed, or which are intended for filling-up vacancies on the walls. This, however, is far better done at the fall of the leaf. See that the drainage of the border is perfect. Continue pruning and nailing in favourable weather, and as fast as the trees on the wall are completed manure the border and turn it up. The quantity and quality of the manure must depend upon the crops taken from the borders; it is never advisable to plant any very exhausting crops on them, but I am aware that in many gardens doing so can hardly be avoided, and where this is the case, fresh soil and manure must be added. A great objection to digging-in manure on fruit borders where the roots can take hold of it is, that it causes unfruitful luxuriance, but unless cropping the borders can be altogether dispensed with, it can hardly be avoided.

FLOWER GARDEN.

As soon as the frost ceases, any ornamental planting necessary should be proceeded with. Clean, dress, and dig borders, and renew soil where necessary, for the reception of gay flowers. Stations on the lawn may also be prepared for tree Roses or ornamental shrubs, remembering not to carry the dotting system so far as to destroy what the painter calls breadth.

GREENHOUSE AND CONSERVATORY.

A day temperature of 55° will be quite sufficient here at present; if this cannot be maintained without strong fires, be content with 45° and moderate fires, remembering that with this low temperature a very small circulation or motion in the air will suffice. A higher degree of heat would hurry the beautiful Camellias and other choice flowers past their blooming period, and create a necessity for the application of more atmospheric moisture, which, unless a warm roof is secured by covering, must end in drip, to the great prejudice of the delicate blossoms. Those who possess only one small greenhouse, and are desirous of a variety of early flowers, may now introduce from the cold frame or pit a few of the early Dutch bulbs, provided the pots are full of roots, without which the application of heat is vain. They should be kept in the darkest part of the house, or what will be more congenial to their habits, covered overhead with a mound of soil. The two points are easily accomplished by first piling a mound (moss would do), and then inverting a pot over the whole. The Wind or Poppy Anemone, established in pots, makes a pleasing variety; also the dark Wallflowers, as well as the French Yellow. Let all plants of a hardy nature have a place close to the front glass, with air at every opportunity. Some of the plants named in the directions for the forcing pit may also be introduced here if there be room, provided such are well-established in their pots.

STOVE.

Little advance in temperature may be permitted here at present; wait for an increase of light, without which the application of heat and moisture will be vain. Let 60° without sun be the maximum, sinking 4° or 5° in the night. Some of the Lælias and Cattleyas will commence rooting; let them have attention and encouragement. Cymbidium sinense is a most useful plant for the drawing-room; the scent is most delicious. A thorough baiting for snails and vermin should take place previous to potting.

FORCING PIT.

In the tank forcing pit the following plants may be now introduced with every prospect of success, if they are in good order:—Franciscæas, Gardenias, Hedychiums, Gesneras, Phajus, Daphnes, Chorozemas, Clerodendrons, Pultenæas, Correas, Cytisus, Eranthemums, Honeysuckles, Sweet Briar, Roses, Lilacs, Azaleas, Dutch bulbs, Acacias, Pinks, especially Anne Boleyn, Aloysia citriodora, Hydrangeas, and Heliotropes. It is not meant that these are all equally eligible for forcing, but that any or all of them may be attempted if well prepared for the purpose in the previous summer by early growth, early rest, and making a potful of healthy roots. With such a miscellaneous mixture it is evident that no extreme of atmospheric management should be pursued. The amount of moisture which the Gardenias, for instance, would revel in would prove prejudicial to such plants as the Heliotrope. A day heat of 60° or 65° will suffice at present, sinking the temperature at night to 50° or 55°.—W. Keane.

DOINGS OF THE LAST WEEK.

After a severe frost on the night of the 5th the thaw commenced very suddenly during the day of the 6th, and on the morning of the 7th hardly a patch of snow was to be seen, but, instead, many lakelets were visible, as the ground beneath was so hard that the melted snow could not at once sink in. The sudden melting of the snow will help to fill many a pond, which will be useful in this district, where in summer there is a

general scarcity of water. As the sun shone brightly for a time on the 6th, we were glad to give a peep of light to Violets, Calceolaria cuttings, and Radishes in cold pits that had had scarcely a peep of light for a fortnight. Some things rather tender, or where there were the least signs of the frost, were left with a slight covering all day, so as to become gradually inured to the full light, as alluded to last week. Thanks to a little litter which we saved from stable dung in summer, the frost has done us but little injury as yet, for the most forward Cabbages, &c., were protected by snow.

KITCHEN GARDEN.

Here work was reduced to a minimum, as beyond wheeling nothing could be done. A little litter was shaken over Broccoli as the snow began to move off, to keep the heads from the sun until they were thoroughly thawed. Young Cauliflowers were not uncovered until Saturday. Forward Lettuces a little frosted will have comparative darkness until the beginning of the week. The excessive frost taught us also the importance of looking before us. We should have liked to have taken up for the Mushroom house more Sea-kale, Rhubarb, Asparagus, &c., but the ground was too hard to permit of this being done with anything like justice to the roots. We generally keep some taken up well covered in a cool place, to be taken for use as needed; but the winters on the whole have lately been so mild that we neglected to have much in reserve, and we should have felt it if the weather had continued a fortnight or three weeks longer, which would have been nothing strange in the years of our boyhood. In another year we shall most likely have more in reserve. If we can obtain a supply in the beginning of the week we shall not suffer anything.

We have mentioned *Asparagus* above, as if for growing in a darkish Mushroom house. We do not generally do so, as for roots taken up to force we prefer a box with a slight hotbed beneath it, so that the young shoots may be alike tender and green from the full light enjoyed. But frequently we have had fine Asparagus by placing the roots on heat in a Mushroom house or other dark place, cutting them when of the proper size, then setting them in a saucer with just a little water at the bottom, packed in damp moss for 2 inches of their height, and exposing the top to full light for two or three days in a house averaging from 50° to 55° or 60° in temperature. The tops thus treated become nice and green. It is a mistake in forcing Asparagus to give cold air, or otherwise greatly to cool the grass, even to green it, as such treatment has a tendency to make even very good Asparagus hard and stringy.

FRUIT GARDEN.

We have done little out of doors except frightening birds from the buds of fruit trees, but in bad weather we proceeded with pruning and washing trees and walls in the orchard house, having much of such work still in reserve. We first of all syringe the glass, woodwork, and trees with warm water with a little soap in it, the water averaging 180° to 200°; then we draw the brush or cloth over the glass and woodwork, and syringe again, driving the water as well as we can into every crevice and opening. Such washing we resort to as a means of prevention, as we in general are put to little expense afterwards in the way of destroying insects. We shall have enough of such work and cleaning for many a wet and boisterous day for six weeks.

ORNAMENTAL DEPARTMENT.

In moving tender plants we had to use boxes and baskets covered to carry them through the open air. We have prepared some places for propagating, seed-sowing, and potting. We are furnishing our fruit houses with strong new wooden stages, of which more anon. Houses have been kept low when the weather was dull, and all extra moisture avoided. Camellias and Azaleas coming on had warm water given to them, and all watering was given with water a little warmed. The chief work on the 6th and 7th was washing the glass and walls of corridors. Beautiful as the snow is in its whiteness, it seems to bring with it almost everything that is dirty and smoke-begrimed in the atmosphere. Stone pathways in arcades, the exposed walls of corridors painted of a light colour, and glass at all exposed with flat roofs, all looked as if a sweep's bag had been pulled over them when damp. All were brushed with warmed, weak, soap water, then with clean water, and the stones well scrubbed with sand, and the effect was most cheering.

Even on the score of cleanliness and freedom from soot-encrustations it is of importance in new places so to arrange the houses at once that one chimney at a little distance from the houses, and where it can be concealed, should be used instead of several or many. In old places, where a glass house has been added here and another there on different levels, and on no definite plan, it is difficult and expensive to secure these advantages, and in many cases the disadvantages must be put up with. In a few cases in flat-roofed houses, after the snow has left its distilled matter behind it, some of the outside glass, quite clean in the autumn, looks as if a soot-brush had passed over it. Such matters must wait for the present.—R. F.

TRADE CATALOGUES RECEIVED.

William Paul, Waltham Cross, London, N.—*Select List of Vegetable, Flower, and Farm Seeds, Gladioli, &c.*

Dick Radclyffe & Co., 129, High Holborn, London, W.C.—*Spring Catalogue of Vegetable, Agricultural, and Flower Seeds, &c.*

Arthur Henderson & Co., Pine Apple Place, Maida Vale, London, W. —*Catalogue of Kitchen Garden, Farm, and Flower Seeds.*

TO CORRESPONDENTS.

BOOKS (*Well-wisher*).—You must consult the catalogues of the British Museum for "all" the books on Orchids. You can have the "Orchid Manual" free by post from our office if you enclose thirty-two postage stamps with your address. Williams's "Orchid-Grower's Manual" is 5*s.*, and can be obtained through any bookseller.

GARDENERS' EXAMINATIONS (*G. W. C.*).—Write to James Richards, Esq., Royal Horticultural Society, South Kensington, W., and he will give you the necessary information. Or you may apply to the Secretary of the Society of Arts, Adelphi, and he will inform you the nearest place to you where you can go up for an examination. You can be examined either by the Royal Horticultural Society or the Society of Arts.

VARIOUS (*Thos. Wilson*).—The King Apple of Lancashire and Yorkshire you will find mentioned in Hogg's "Pomology" and "Fruit Manual" under the name of Warner's King. The baking Apple is Toker's Incomparable. The defect which you complain of in the Black Alicante Vine will be remedied by age. We cannot suggest anything better for arresting the extension of the Birch branches than that which you have adopted, except that you might take out some of the longer branches at the same time that you curtail the roots. This might be done without disfiguring the outline of the tree.

PRIZE FOR STRAWBERRIES AT THE OXFORD EXHIBITION (*T. Elcome*).—If the prize was offered by the Royal Horticultural Society, write to Mr. Richards, Assistant Secretary, Royal Horticultural Society's offices, South Kensington, London. If it was a local prize, write to the Secretary of the Oxford Horticultural Society.

TREE-BORING CATERPILLARS (*J. Green*).—They are the larvæ of the Goat Moth (Cossus ligniperda). When the existence of one of these creatures is detected in the trunk of a tree by its excrement, relief comes too late for the tree, even if we are able to kill the caterpillar, the mischief being already done. Notwithstanding this, the caterpillar should never be left undisturbed, and an attempt should be made to reach it by enlarging the opening with a garden knife, or endeavouring to kill it by thrusting a piece of pointed wire up the hole. It is called the Goat Moth from the peculiar smell both of the insect and its larva.

PINE APPLE (*W. Watson*).—Our correspondent wishes for information respecting a variety called Prince Albert, the usual weight, quality, and if best in summer or winter.

GERANIUMS FROSTED (*Novice*).—At present we would only cut away the frosted parts, deferring cutting down until they were beginning to grow; or prune them at the beginning of March, and encourage growth with a gentle heat.

WATERING WITH HOT WATER (*D. M.*).—It is advisable to water plants with water somewhat warmer than the temperature in which they are growing in order to prevent checks, which are apt to result from using water colder than the house. Beyond this there is no advantage in using water warmer than the atmosphere—it stimulates the roots; but watering with warm water may be carried too far, as it is evident that though the hot water may for a time excite the roots to growth, it falls to the temperature of the house, and though not so immediate in its effects, the chill is quite as disastrous as watering with water which is too cold. In a house at 55°, we consider 75° too high a temperature for the water; 55° to 60° would be quite high enough, and in no case would we use water higher by 5° than the mean of the house, or that of the bed the pots may be grown in or on. We have known Pine-Apple plants in a hotbed of tan supplied with water at 65°, whilst the pots were plunged in a hotbed where the temperature at 1 foot deep was 90°, in effect like a fall of snow at midsummer.

FITTONIA ARGYRONEURA SHOOTS DYING (*Idem*).—We think it is caused by the plants being grown in a variable temperature. It may also be a result of cold air in combination with an excess of moisture. Apart from that we consider it is mainly due to the low temperature. The temperature ought to average 60° at this season, and especially as the plant is but young.

TREATMENT OF BEDDING PELARGONIUMS—FORCING BULBS (*A Scotch Gardener*).—We have no doubt your treatment answers your purpose, but we do not see any necessity for first placing three or four plants in a pot, and this month shaking them out and potting singly, then encouraging growth for a few weeks. We think they would be better potted off singly at first, by which means you would save the labour of the first potting and shaking out, which latter is attended with the loss of any newly-formed fibres. We have known a good display of bloom from autumn-struck bedding Geraniums; but we prefer keeping all the old plants we can, as they bloom earlier and more profusely than cuttings of the previous autumn. The treatment of the bulbs could not have been better. For early flowering they should be potted much earlier than the 26th of October; indeed, we would pot in September at the latest for blooming at Christmas and the New Year, and afford them a month, or, better, six weeks to form roots before being introduced into heat. Both Hyacinths and Tulips may be successfully forced from October, but the bulbs must

be potted early, so as to afford time for roots to form before the leaves start into growth. Cinerariae are much injured in a temperature of from 60° to 65°. They can be forced; indeed we have now in a pit at 45° to 50° upwards of a hundred plants that will flower finely next month. They are in 8-inch pots. Of Primulas in a temperature of 60° to 65° we have no experience. Ours are now in fine bloom in a greenhouse at a temperature of 40° to 45°, the highest temperature they require. We know that Geraniums may be packed away in autumn in a cool dry place, but safe from frost; and if potted in March and encouraged with heat and moisture, they will be in good condition by the end of May—quite as good as those wintered in a glass structure. We see nothing in your treatment but what is sound.

Increasing Heat from Hot Water (*H. Foy*).—You cannot do better than as you propose—add another pipe all round, connecting the flow and return with 1-inch piping. Strong pipes may be had with a screw formed at each end; or you may have one screw, and the other end to go firmly into a socket pipe. We have found that by connecting with inch pipe in the mode proposed, if the inch pipe is inserted in the side, and the added pipe is on the same level, the fresh pipe will be scarcely so hot as the first are; but if the inch pipe is inserted near the upper surface, and the fresh pipe is an inch or two higher all round, then the heat will be about equal.

Vines in Pots Injured (*G. B. A.*).—Under the circumstances we would cut the Vines as low as convenient, and let them start naturally the first season, taking one shoot from each. You can give a little extra heat in summer and autumn to ripen the wood earlier.

Gas Extinguished by Down-draught (*S. K.*).—Try suspending a thin sheet of talc or of iron over the gas lights.

Air Circulating in Ice House (*B. H. P.*).—The propriety of air passing through an ice well, or house, would depend on whether the house was empty, and whether the air was warm or frosty. In keen frosty weather free air to the ice house would be an advantage. We prefer dry straw to cover ice, though we seldom use any.

Tax on Gardeners—Heat from Dung (*T. H. T.*).—Every gardener, whether he lives on the premises or not, subjects his employer to a tax on his account. In fact, more than that, according to the celebrated decision in the Duke of Marlborough's case, every old labourer who carries a broom in a garden or pleasure ground, may render his employer liable to a similar tax. This, however, is seldom resorted to in practice, and it would be very hard if gentlemen who kindly employ a number of extra men on their demesnes, when work is scarce in winter, would also be mulcted by a tax on their generosity. Fresh dung merely thrown together into a bed will not keep heat long, but will soon heat itself dry, and especially in such weather as we have lately had. If you turn it over now and add a little more water where dry, it will soon heat itself again. If you cannot do that, then prepare a little more dung, get it hot, and take what you can away from the outside of the old bed, add the fresh, and watch the results. We know of nothing better as a weeping tree exposed to the sea air than a Weeping Willow, or a Weeping Ash, but near Ilfracombe we would try the beautiful Sophora japonica pendula, grafted some 12 or 15 feet from the ground. The wood has a beautiful tinge even when the leaves have fallen. Cupressus macrocarpa planted six years may be transplanted, if care be taken to trace the roots and take it up with a ball of roots. We would, however, defer the operation until the end of March.

Wardian Fern Case (*E. S.*).—We know of no makers but those who advertise in our Journal. Write to Mr. Fox, Arcade, Royal Horticultural Society's Garden, South Kensington. He may give you information.

Cheap Hot-water Apparatus (*Lancashire*).—Thanks, we will ascertain if it is suitable.

Hot-water-heating Failure (*E. C. S.*).—We think that if you will read carefully the article of "R. S.," page 321, October 27th, and the questions and the answers respecting it, at pages 8 and 9 of the current month, you will most probably find out the cause of your want of success. If your boiler is sufficient for double the piping, it still must be rather small, when, though tubular, it can hold only about half a bushel of coke. In such a case we would not use the coke over-large, but break it sufficiently to be close together, but not to make it too small, yet so that the largest pieces should be from the size of eggs to that of walnuts, and the smallest from the size of beans. If you could obtain it we would have half of the coal used by "R. S." The great cause, however, of your failure from the fuel caking, and the fire going out beneath it, we think is owing to the admittance of too much air from the ashpit door. This better attended to, with the last feeding of the furnace pressed down rather firmly, and the help of a damper, would, we think, do away with your troubles. But this will not be the case unless two things be kept in mind and acted on:—First, That every furnace and every boiler, though apparently scores of them seem exactly alike, will each have some little peculiarity, and that peculiarity can only be known by practical observation. Secondly, in adding fuel to a furnace for the last time at night in severe weather, it is well to bear in mind, that the fuel added is less intended to raise the temperature in the house than to keep it from falling over-much. It is, therefore, important to have a good heat before adding the last fuel.

Hot-water Piping Necessary (*W. G.*).—For a span-roofed house 16 feet by 10 feet, we do not think that one 4-inch pipe as a flow, and a similar pipe as a return, would be sufficient to keep up a temperature of 45° in such weather as we have had lately. Such pipes all round would be safer. Much, however, would depend on how near the glass comes to the ground on each side; if within a foot or so of the ground, a third pipe at the side and end would, at least, be necessary, not but that the pipes alluded to would throw off much heat if the water were near the boiling point, but it is always a waste of fuel to make it so hot. Four-inch glazed drain-pipes well cemented at the joints, would do for hot water just as well as iron pipes. In the first house we saw heated by hot water, such pipes were used. It is well to have an iron pipe for at least a yard from the boiler—flow and return. Considering the number of joints, if the pipes are of the usual size, and their greater liability to accidents, they are, on the whole, not equal to iron pipes. As you have them, you might make your two iron pipes, with the exception of that near the bottom of the boiler, flow pipes, let them terminate in an open cistern at the end of the house alluded to, and from that take one or two of the glazed pipes on a lower level as returns. We regret we cannot say more of Bishop's boiler than is stated in the "Heating Manual," and page 134 of the twenty fifth volume of the old series, but the chief advantage of such a boiler consists in its being made by a clever handy man. When that cannot be done, it will generally be better to use a common saddle-back or conical boiler. Boilers may be extremely simple and effective, as Mr Bishop's, but then such boilers can only be made so as to be marketable where there is a good supply for them. Perhaps Mr. Bishop or Mr. Allen may see this, and then give a more definite reply to our correspondent. For houses of all such sizes we consider that hot water is the most expensive mode of heating. Supposing that in this 10-feet span house the pathway is in the middle, then a 6-inch-wide flow and return fine under the pathway, with the furnace at one end outside, would be by far the cheapest and most comfortable mode of heating it. A small iron stove inside, with a flat top for an evaporating-basin, would cost much less than either, but the firing would be more troublesome. However, let everybody have hot water if it so please them. The heat is genial, and there is less likelihood of accidents.

Heating a Portable House (*New Subscriber*).—It is very difficult to secure all that you want, simply and economically, because the place is so small, and all must be portable. The house is 12 feet by 8 feet, the height at back 9 feet, in front 5½ feet, all of 1-inch deal, except the roof and front of glass. A hotbed is wanted for raising seeds, and we are asked our opinion as to a flue, hot-water pipes, and tanks, but all these or any one of them must be portable, and require little attention in stoking, &c. We can hardly see how you could have a portable flue, unless it were an iron one, and the furnace could not well be portable. We do not know how you are situated, but if you could obtain gas easily, a gas-stove and small boiler would be the very thing for you, with a very small pipe leading from the furnace to the open air. (See No. 311, on gas stoves.) With such a stove in the centre of the house in front you could take 2-inch hot-water pipes each way, and the whole of that space you could enclose in a chamber from 18 to 24 inches wide with sheet iron, and set glazed cases over it for propagating, or you could do this, covering in half of the length, leaving the other exposed for heating the house. We have seen plans of gas stoves and boilers by a Messrs. Wright & Co., where the stove is fitted with three lengths of small piping for a space of nearly 5 feet. Now the furnace boiler left exposed, and all the pipe part shut in, would form your bed for seed-raising, &c. There is no plan so simple as gas, where you can have it handy. Another simple plan and portable, would be to have a low, square, flat-headed, iron stove to be fed from either the inside or outside of the house, a space shut in to form a chamber, the top of the chamber to be 2 or 3 inches higher than the top of the stove. The whole space in front may be enclosed for 18 or 20 inches in width; but the greatest heat will be next the stove. We would use stout sheet iron for the top of the chamber, which would thus be the bottom of the hotbed. A few sliding openings in the side of the chamber next the pathway would enable you to regulate the heat of the house as desirable. Once more, suppose you had a small iron stove to heat the house so as to keep your plants safe, and if you do not wish a large propagating-box, and if you are at all near a kitchen boiler, what would you say to this?—viz., a stout wooden box, say from 3 to 4½ feet long, 20 inches wide, and 3 inches deep, set on any suitable height, made waterproof inside, covered on the top securely with plate iron, and furnished with small wooden boxes, say two or three, or all in one piece according to the size of the shallow box, and glazed with a moveable sash, if that should be a single square or frame. There might be a tap at bottom to take out water, and one pipe at the top to be closed with a cork when not wanted, and to admit a funnel when necessary; and by means of a potful of warm water you could regulate the heat in your little propagating-bed to a nicety, by simply drawing off cold water and adding hot water. Twice in the twenty-four hours would generally suffice, so far as heat was concerned.

Mushroom-house Shelves (*N. M.*).—We think you must have missed what has been said as to the material of Mushroom shelves. The rusting of iron was referred to, and ignorance confessed as to how long galvanising would save iron from rusting. Your practice may warrant your preferring wood to slate for shelves, but we must own we never could see much difference as respects the produce, when both have been managed with equal care. Slate gives no harbour to some enemies, as wood does, especially when it begins to decay. The mere extra coldness in a house is of little moment. We use wood ourselves, but we by no means disparage slate.

Vines in Pots (*W. B.*).—We have no doubt that Vines in pots will succeed very well on the top of the back flue in the vinery as you propose; and if the pot stands on a large flat, and the flat on the top of the flue, it would be well to have three pieces of something inside the flat or saucer, for an inch in depth, for the pot to stand upon, and the water in the saucer should never be higher than the bottom of the pot. All watering should be given at the surface, but if more comes into the saucer it should be removed. Such Vines, according to their strength, may be left from 3½ to 5 feet in length. Unless you make an unusually good bargain we have little faith in your doing much with Vines sold at 5*s.* each. Good fruiting Vines in pots require so much care, labour, and room to well ripen the wood, that we think good fruiting plants cannot be had for that money, unless the holder is very anxious to sell. The mode referred to—placing the pots in pans, is not so good as having a box separated from the flue by a brick laid flat, and the box large enough to permit of the pot being plunged in tan or leaves. The giving enough of heat in the flue at the back of the house, to start these Vines now will undoubtedly influence the other Vines in the house and cause them to break sooner in consequence, though not so soon as the Vines in pots. If you wish to keep the house Vines back and get the pot Vines forward, you would require to shut in with glass the pot Vines, and give more than the usual quantity of air to the front of the house. By such means the Vines in pots may be strong before those Vines planted in the house begin to swell. With the house all open you may get the pot Vines to ripen their crops a month earlier than the Vines in the house; but where anything like two crops in one house is desirable it is essential that one part should be shut in, or that the late Vines should be taken out until it is deemed necessary to introduce them.

Labelling Fruit Trees.—"W. R. J." prefers numbering the trees, and having a plan and numbers on it in his pocket, and his gardener having another. This does not facilitate the acquirement of the names by visitors or other members of the family.

Auricula Shows.—"E. R." wishes to know when an Auricula Show is to be held in London or elsewhere.

Fuchsia Father Ignatius (*A Lady in Cheshire*).—It is named as you conjecture. Corolla cup-shaped, indigo, sometimes striped with rose; tube and sepals scarlet. The plant is of compact free-blooming habit.

Hot Water Circulating Downwards—"'Poor Gardener' asks me to explain how hot water will descend 22 feet in 100 feet, and then return to the same point on a level. When I wrote before in reply to 'Poor Gardener's' lamentations I ought to have mentioned that the flow-pipe first rises from the boiler to heat a propagating pit which is much higher than our greenhouse; the same pipe branches off to heat this pit, and continues its downward course to heat the greenhouse. The return-pipe in this greenhouse goes back to the boiler after passing through the bottom of the bed in the propagating pit mentioned above, being quite on a level, but not below the level of the boiler. I may mention that the air-pipe at the elbow of the hot-water pipes at the farthest end from the fall-pipe in the greenhouse has been some time broken off, and I have it plugged up so that only the air-pipe at the top of the fall-pipe is of any service to the piping; still the water circulates freely without the other air-pipe —R. Giddings, *Gardener to W. H. Michael, Esq., Cholmeley Park, Highgate.*"

Cucumber Raising in a Greenhouse (*M. P.*).—Unless you have means of covering the bed in front of your greenhouse with lights, or keep the temperature higher than is required for any greenhouse plant, you cannot raise or grow Cucumbers there. We would cover the space with lights, having a box made about 15 inches high at back, and 9 inches in front or next the walk, and, to cover it, lights hinged at back. It would in that case be a sort of propagating-box, than which nothing is more useful. There should be one in every house. The space for fermenting materials over the flue we would fill with well-sweetened horse dung, as free of straw as possible, but spent hops are good and more lasting than dung. Surely those you used last year were old. Fill quite full of the fermenting material in the first instance, all but space for 6 inches of plunging material, as cinders, cocoa fibre, or sawdust, and in three or four days the bed will be warm. It will be a good place for cuttings and raising from seed plants which need such forwarding.

Old Camellias Sickly (*Camellia*).—We had a lot of similar plants. They had been cut hard and been potted a long time. Early last April we turned them out of the pots, picked away all the old soil we could from amongst the roots, and potted most of the plants afresh in the same size of pot, but some we transferred to larger pots. We used the top inch layer of pasture where the soil was light, and midway between loam and peat, such as is to be had on many commons. It is a soil in which Gorse is plentiful, also Brake and Foxglove where there is shade. This compost was chopped small, and the pots being well cleaned and drained, we put in the plants so that the setting-on of the roots was about half an inch below the rim of the pots. Then we potted, taking care to work the soil well in, and leave no cavities, and the compost was put in rather firmly. The soil was neither wet nor dry. After potting the plants were placed in a vinery, and were syringed twice a-day, and they started into growth very weakly or tardily, but recovered very quickly, and have exceeded our expectations. Though the plants may not have such foliage as we could wish, the leaves of the past year are excellent, both in colour and size, and they are now in splendid bloom. We advise this plan to all who have sickly Camellias. The plan was first broached in this Journal by our esteemed correspondent Mr. Pearson, of Chilwell.

Re-transplanting Roses (*R. S. D.*).—The Roses planted last November may safely be taken up and planted where you require them, either this month or in February, before they begin forming fresh roots. The earlier this work is done the better, the weather being mild and the ground not very wet.

Greenhouse Plants Blighted (*H. L. B.*).—One of the leaves sent us is covered with black fungus, caused by the secretion of some Coccus or scale insect. The remedy is to dip the plants overhead for about a minute in a solution of 3 ozs. of soft soap to the gallon of water, with about twelve drops of spirits of turpentine. Use it at a temperature of 140° for plants that have the wood well ripened, but to those which are partially growing at 125°. The other leaf, which appears to be that of a Myrtle, syringe with the same solution, laying the plant on its side and turning it round, so as to thoroughly wet every part. Keep the solution in all cases from the soil. It is infested with red spider, and we think thrips. To free the leaves of the black fungus, wash them with a sponge and the solution above named. There is no preventive of insects; they come in the best of structures under the care of the most skilful hands.

Gladiolus Treatment (*Idem*).—Except in very sheltered positions, or warm and dry soils, and those inclined to a sandy peat in character, the bulbs should be taken up in autumn as soon as the leaves begin to turn yellow, be dried in a cool airy place, and kept in a cool place, yet safe from frost. Plant them about the middle of March in ground that has been well and deeply dug, exposed to the weather during the winter, and liberally manured. Water freely in dry weather, both overhead and at the roots. We do not take up our bulbs, for our soil just suits them, and they spread and grow in open places in the shrubberies as if they were indigenous. They are, indeed, very hardy, but do not like wet soils. Under this treatment they flower in July and later.

Camellia Buds Falling (*A Young Beginner*).—We think the cause of the buds falling is the roots not supplying sap for the proper expansion of the flowers. In fact, the roots are probably unhealthy, though the evil may be a result of too moist and cold an atmosphere. We advise you to follow the instructions given above.

Plum-tree Roots Diseased (*Celt*).—The roots sent are destroyed by the mycelium of some fungus, the odour of which is very powerful and offensive. We have no doubt it has found its way into the border through using manure, leaf soil, or other material containing the twigs or branches of trees; or it may be that the border was previously occupied with fruit trees, the old roots of which have been left in the ground, and from one or other of those causes the mycelium has found its way to the roots of the young Plum trees. It is doubtful if anything can be done to save the trees from further decay, but we would advise giving the ground a soaking with salt water, 4 ozs. of salt to the gallon of water, making holes so as to admit it more freely to the border. We think your only effectual remedy will be to clear out the trees, remove all the soil that exhibits the "mouldy" appearance, and replace with fresh compost and trees; but we would try the salt solution and free waterings next season. Apply the salt solution between now and March.

Names of Fruits (*J. Bryan*).—Your Apple is Coe's Golden Drop.

Names of Plants (*E. L. J.*).—Zygopetalum Mackayi. (*G. H. W.*).—Lælia anceps. (*Rawlings*).—1, Adiantum formosum; 2, Asplenium Adiantum-nigrum; 3, Asplenium marinum; 4, Platyloma rotundifolia. (*J. R. P.*).—Pittosporum crassifolium, a New Zealand plant, and quite capable of enduring greenhouse treatment. By no means should it be classed as a stove plant. (*A Lady Subscriber*).—Acacia lophantha.

POULTRY, BEE, AND PIGEON CHRONICLE.

CUP FOR LIGHT BRAHMAS.

Having undertaken to get up a subscription cup for the best pen of Light Brahmas at the forthcoming Portsmouth Show, will you permit me, through your columns, to thank those Light Brahma-breeders who have already subscribed, and to make an appeal to other friends of our beautiful and popular breed to lend a helping hand? The sum already promised or paid amounts to £4 7*s*. Two or three additional such subscriptions will complete the requisite amount, and I dare say there are some of your readers who, seeing these lines, will be willing to contribute.

The Portsmouth Show, though of recent origin, promises to be a success, and will combine with her elder sisters, the neighbouring exhibitions, to take away the reproach from the south of England of being behind the northern and midland counties in the number and excellence of poultry shows.—John Pares, *Postford, Guildford.*

COLCHESTER POULTRY SHOW.

Your readers will see in an advertisement that there is to be another poultry show in addition to those that have been announced for the last six months—viz., an exhibition of Poultry, Pigeons, and Rabbits, at Colchester. It would be difficult to arrange a more comprehensive schedule than is issued by the Committee. There are forty-eight classes, comprising twenty-six for fowls (including three for Ducks), with the first prize, £2; the second, £1. Pigeons secure seventeen classes, including a class for the best four pairs of working Antwerps. The war excitement and contingencies have caused us to go back some centuries by using the Carrier Pigeon for the swift dispatch of important messages. It will be well to increase this breed in the same manner as they are increasing our weapons of defence, for both would be found of great service in the event of a war with this country. Whoever has a stocked loft of good Antwerps at such a crisis will realise something handsome. The first prize for Pigeons is £1, the second 10*s*. The great success of the Rabbit Show at York, with 123 entries, and undoubtedly the best collection of Rabbits ever brought together, have induced the Committee to offer £12 in four classes —viz., first prize £2, second £1. There is one class each for Lop-ears, Angoras, Himalayan, and "Any other variety;" a pen to consist of a single Rabbit, either buck or doe. There is a class for dead poultry. In a railway point of view, Colchester is in a good position, being only forty miles from London, and in direct communication, *viâ* Cambridge, with the Great Northern, Midland, and London and North-Western Railways. With these advantages it is to be hoped that aggravating non-arrivals of stock will be avoided.

Another poultry show is talked of in connection with a fat cattle show to be held in Colchester during December. Years ago Colchester had poultry shows with seven hundred entries, when but few towns had any, and there was scarcely any knowledge of the instruction and amusement to be derived from them; it now seems as if it intended to begin again, and to hold its position as one of the originators of this national pastime.—David P. Goodino, *Colchester.*

BRISTOL AND CLIFTON POULTRY SHOW.

This now celebrated Show, on the whole, more than answered our expectations last week; and if the selling classes, which were wanting here, are deducted from the Crystal Palace, it has again maintained its position as having the next largest number of entries of poultry to Birmingham, whilst in point of quality several of the classes were by far the best we have seen during the season. In spite of the late severe weather the birds were mostly in fine order, and the number of empty pens not so great as might have been expected. Of the arrangements we can only say they were as good as usual, this Show being always enviably distinguished for absence of complaints and mischances, while the plan adopted of printing the awards in the margin of the catalogue adds greatly to the convenience of visitors.

DORKINGS.

1. At this Show chickens always come first. Mrs. Wheatley came

to the front with a grand cockerel, again bearing out our remarks on this class at Birmingham. The second and third-prize birds were little behind, and all the prize birds were remarkable for the sound state of the feet. This remark applies to all the Dorking classes, and is the more singular when compared with the tender feet seen at all previous shows. Mr. Martin's bird was not sent.

2. The cup pen contained the very best pullet we think we ever saw, her companion not so good, but would have looked grand anywhere else, and Mr. Patton amused himself and the public by putting £1000 upon this pen. Well, he had a right to be proud of them, though a "cool hundred" used to be thought sufficient to deter purchasers. The second-prize pen was also very good, and Grey, like the first; third, a fair pen, very dark in colour, soon claimed at £10. Both these classes were equal to anything seen this year.

3, 4. Old birds, hardly so good. The first-prize cock was a good bird, a little defective in one foot, but beating easily Mr. Martin's Rose-combed bird, which had evidently had more work than was good for him, though still good enough for the second prize; third fair. The first-prize hens we thought a mistake; they were very dark birds, but not so fine as the Grey second-prize pen. Third again a dark but small pair, and there seems to us to be an evident tendency in the Judges this year to make Dorkings birds of colour. The highly commended pens, 60 and 63, were grand birds, and the hens on the whole were better than the cocks. Except this last class, we thought the Coloured Dorkings remarkably well judged.

5, 6. Silver-Grey cocks were far from equal to those shown at Birmingham, or perhaps London, but the prize birds were fair and well placed. In the hens the prize birds were equal to any yet shown, but the rest only moderate.

7, 8. In White cocks we thought an unnoticed pen, 93, as good as any. First prize very good; second very small; third a large bird, but coarse in comb. The first-prize hens very imperfect in the Dorking toes; second very fair in quality; but the third hardly equal to the highly commended pen 99. Both White classes were very moderate in quality.

COCHINS.

9. Buff cockerels a fair class, but behind Birmingham. The cup pen was a very fine bird, in spite of decided faults, and honestly shown; a little hocked, comb badly serrated, and a little heavy in carriage, but a fine, even, deep gold colour, and shown with all his tail in. Second came a rather clumsy and rather hocked bird, but equal to the average this season; third also hocked, and with a slipped wing, but fine in colour, also too much tail, but shown with it "all there."

10. The pullets, on the other hand, were by far the best class of the season. First-prize rather wanting in shape, and decidedly not equal to the second, which was Lady Gwydyr's old grand pen, and, in spite of a bad match, the best this year. Third pen fine shape, but bad combs, and one a very bad colour on the cushion. The highly commended, 134, was a really good pen, but the high commendation of 138 must have been meant for 139, the colour being very bad, while 139 was fair in every way. Another good pair was disqualified by plucked hocks.

11. First-prize old cock beautiful colour, large and massive; second very good, but a trifle clumsy; third good in colour, but narrow in the saddle, and wretchedly feathered. A middling class.

12. Hens, on the contrary, were a small but very good collection. First a grand pair of light Buffs; second a medium colour, and only inferior in leg-feathering; third well feathered, rather darker; the two highly commended pens also good, and the three prize pens decidedly the best three pens seen together this season.

13. Partridge cockerels a fair class. First a good colour, but bad in every other point, and very small; the third-prize bird worth a dozen of him; but had Mr. Tudman's highly commended pen 170 more leg feather, he would have been better than either. Pen 179 (unnoticed) also a good bird. Second-prize a moderate bird, but in first-rate order. Pen 173 appeared to us to be the same as the first at London, and was probably passed for his hocks.

14. First-prize pullets a grand pair in every way; second bad and streaky, and far worse than Mr. Crossley's, the hocks of which, however, appeared doubtful. Third-prize moderately good in marking, but beautiful in shape, and deserving their place.

15, 16. The first-prize Partridge cock was of very bad carriage, actually drooping to the tail; second-prize far better, but on the whole we preferred the third-prize bird, though coarse in the head. Pen 201 a fine bird, but sadly knocked up, and not fit to show. Of hens there were only four entries. The first took the cup, and was a truly grand pen; second not far off in quality; third middling, one bird having a very coarse head; the fourth pen had one very good bird, but the other spoilt the pen.

17, 18. First and second White cockerels very good; third and the rest not up to the mark, and we thought it a poor class, the Judges thinking the same, only one other pen being noticed. Pullets much better, and the prizes well placed.

19. The first-prize old White bird was very fine in every way, but a little scaly on the feet; second-prize very large, but we liked the third better, in spite of a little yellow.

20. The White hens were the best class of all the Cochins, or of all the year; we were truly glad to see the true old shape, the true old colour, and the true old feather back again. Every pen but one was mentioned, and the prize pens were simply magnificent. It really surprised us to see such a class after what we had seen at the previous shows. Wherever have the birds been to in the meantime?

BRAHMAS.

21. The Dark cockerels were a remarkable collection of forty-five entries. Mr. Moor repeated his Palace success with a bird rather small and low in saddle, but of excellent colour and general shape; second-prize a bird never before exhibited, quite different from the ordinary type of Brahma, standing very tall, and with hardly the accepted tail, but of extraordinary symmetry and grace for so large a bird; the second-prize Birmingham bird came third, the Birmingham cup and many other well-known winners being only highly commended. Altogether the quality of this class was beyond anything we have ever seen.

22. Pullets not so good, but better than at any previous show this season. First-prize, large bird, of fine dark colour, and in good condition, but bad shape, coarse in the head, and mossy in pencilling; second a good pair, one very heavily hocked, but not plucked; third very poor, both in shape and marking, and much worse than several other pens. Pen 322 we thought the best in the class, though only highly commended. Besides the prizes, thirteen pens were noticed by the Judges.

23. The cup was taken by Mrs. Hurt's first-prize cock claimed at Birmingham, which won also at London and Manchester, and in spite of his white tail we thought him well placed; the second was in wretchedly bad condition; third very fine, being the same as took second at Birmingham.

24. The cup was taken by the first-prize Birmingham pen, though only highly commended at Manchester the week before; such is the uncertainty of judging. We liked the second best of all, being grand in shape, but one bird had a tumour on the breast; third a fair pen. This class was very middling.

25, 26, 27, 28. The Light Brahmas were at this Show far behind the Dark in quality. The first and second cockerels were first and second at Birmingham, both small, but of beautiful shape. The first-prize pullets were Mr. Crook's well-known pen; second dirty, but very good; the third contained one very good bird, but the other poor. The cocks looked mostly out of condition. First a fine massive bird of beautiful colour, but very coarse in the head; second very good indeed; third wanting in colour, and very yellow. First-prize hens hardly equal to second, though more showy.

SPANISH.

29. The cockerels were a grand class, and far surpassed all previous collections, though not equal to what we expected owing to the weather. The cup and second were correctly judged, though the cup bird went "all to pieces" next day, which occasioned many remarks on the judging by those who had not seen the cup bird as he was; the third-prize was wry-tailed, which should have disqualified him. The cup Palace pen arrived in bad condition, and was passed over, but picked up wonderfully during the Show. Many other birds were very good.

30. Spanish pullets were a very hard class to judge. On the whole, in spite of much discussion, we thought the awards well placed, but the six highly-commended by no means represented the full merit of the class, which was really wonderful. This was partly owing to the ungalvanised wire fronts of the pens being rather injudiciously oiled, and several of the birds poking their fair heads between the bars paid the penalty of feminine curiosity by showing stains which did not really belong to them.

31, 32. Old cocks were not up to the Bristol standard, owing to the severe weather, only one pen besides the prize hens being commended in a class of eleven. Hens were a small class of six. The first-prize took the cup and were magnificent, the second being not a long way behind; the third only of fair average quality.

FRENCH FOWLS.

33, 34. There was not a single La Flèche cock in the French class, and only one pair of hens, which took the third prize and deserved it. The first and third-prize cocks were Crêve-Cœurs, and we thought the third best. The second was a Houdan, and in his right place. The first-prize hens were also Crêve-Cœurs, and the second Houdans. These classes were not of remarkable merit, and, with perhaps the exception named, were certainly well judged.

HAMBURGHS.

35, 36. Nearly all the Hamburgh classes were a treat to inspect. Gold-spangled were very thickly commended, and deservedly so. The cocks were well placed. We remarked with regret in this class several combs which had evidently had the razor across them. In hens, the first were very neat and almost too dark on the breast, but it must be considered they were shown genuine. Second beautifully marked, but not a perfect match. Third middling in quality, but shown in splendid condition.

37, 38. As a class, the Silver-spangled were not equal to the Gold, though in both classes the cups went to this breed. Cup cock a beautiful tail and breast, but not perfect in bars. Second a little clouded in tail, but a good bird; still, in every point, we thought him inferior to the third. The one highly-commended bird was also very good. The prize hens were all good, and Mr. Howe's highly-commended pen, 616, was well worthy an extra prize.

39, 40. The cup Gold-pencilled cock was a beautiful bird, with the

defined dark tail so needful for pullet-breeding. Second almost if not quite as good. Third much more bronzed, but with nice carriage. We remarked many other bronze tails, to which the pullets owe their failing colour. Pen 640 was a beautiful bird, and ought to have been highly commended instead of simply commended. The cups hens were dense black in the marking, and the second little worse. Third a middling pen, but in fine order. Pen 649 better in colour than either, but small and out of condition. Pen 652 one exquisite bird, but the other poor. Pen 661 one of the best marked in the class, but one hen had an immense overgrown comb, which spoilt the pair.

41, 42. In Silver-pencilled the first-prize cock was a small bird, but good in comb and tail; the third better than the second in every point except tail, which was mossy. Hens were better than usual of late, and the prize pens well placed.

43, 44. Black cocks as good as ever, and the winners rightly selected, several competitors at recent shows losing through want of condition. Black hens won the cup, and were a perfect pair in splendid order. Second and third also good, and not a bad pen in the class; but we never remember seeing a pair quite equal to the winners.

GAME.

44, 46. Cup Black Red cock a fine bird, perhaps a trifle heavy. Second rather dark in colour, but we almost liked him the better. Another unnoticed pen of the same exhibitor ought to have been at least highly commended. Third rather small, but a model in shape. A highly-commended pen, 715, was a beautiful bird in all but his sharp Malay shoulders, which also disfigured many other birds in this class. The hen awards were much discussed, but we thought them pretty fair, changing our own opinion after handling one of the birds, which looked rather soft, but was just the contrary. Mr. Matthews's unnoticed pen, 751, was, however, one that ought to have been highly commended.

47, 48. The cup Brown Red cock was a "clear case" as to his merit, but very short of hackle. Second a very large bird—too large, but good figure nevertheless. Third middling; and the highly commended pen, 763, must have taken his place, but the comb was badly dubbed and had grown again. Hens were barely an average, except the prize birds, which well kept up the old standard. We noticed, however, that most of the birds are getting too red in the face, which is a pity.

49, 50. Duckwing cocks a small but unusually good class, several very good birds being passed over, probably for severe trimming. The third-prize bird was in the best condition decidedly, and many thought should have stood first, but all three were so good there was little to complain of. Hens not so good in our opinion, and we did not thoroughly like any but the prize and the commended pen, 810.

51, 52. In the "Any variety," all the prize-winners were Piles. First-prize cock a beautiful bird. Second not a good colour; and third decidedly too big. Hens were also on the large scale, all but the third prize, which we liked best, being a hard bird of beautiful proportions, and with a true Game head and carriage. Both these classes were decidedly poor.

POLISH.

53, 54. The cup and second-prize Polish cocks were good Silvers; the third a Black. The highly commended pen 842 was a fine Gold bird; we regretted not to see it in the list. The cup hens were also Silver; second an unusually good pair of Golds; and third again a neat pair of Blacks. The hens were a really beautiful class; the cocks hardly so good.

ANY VARIETY.

55, 56. In the Any variety class for cocks Mr. Hinton topped the list with a fine Malay; second was a handsome Sultan, and third Malay again. A Scotch Dumpy only was highly commended, and a Black Cochin commended; all the rest—Andalusians (good), Cuckoo Dorkings, and a Dominique being passed over. In hens Minorcas were first, Dominiques second (a very good award, as being a new breed in England), and a nice little pair of Pekin Bantams third. We think the last is the first pair of Pekin hens ever shown together.

DUCKS.

57—60. Aylesbury Ducks were fair and no more; Rouens a fine class, and several pens changed hands. Blacks mustered eleven pens, and on the whole seem getting a little smaller, which is well; the first-prize pen was exquisite both in shape and plumage. The Any variety class, as usual now, consisted mainly of Mandarins and Carolinas, and the whole class was specially highly commended by the Judges. The third prize, however, went to a nicely marked pair of Sheldrakes.

GEESE AND TURKEYS.

61, 62. Geese were up to the Birmingham standard, and the best collection ever sent to Bristol. The first and second were white, the third Grey. Between the cup and second-prize Turkeys was a very close shave, and the Judges finally changed their first opinion, and gave the cup to the celebrated American bird sent to Birmingham by Mr. Simpson. He has certainly gone very shaky in his legs and feet, but we still think the cup rightly given.

BANTAMS.

63, 64, 65. The first-prize pen had a beautiful cock but only fair hens; second, exquisite hens but an inferior cock; third, not so good as several others; and pen 1011 ought to be at least highly commended. Brown Reds were poor in numbers and quality as a whole, but the cup pen was really exquisite as to colour, carriage, and condition. In the class for Any other variety of Game first and second came Duckwings, and third a beautifully shaped, but, as regards the hens, not over-well-matched pen of Piles.

66, 67, 68. Sebrights, a small but beautiful class, every pen but one being mentioned. The first and second were, however, a long way ahead. Blacks were the best of all the Bantam classes, so much so that one of the Judges promised a cup for them next year. All the prizes were in their place, the first being very good, second rather a large cock, but good in head and carriage. Mr. Cambridge's best pen, containing the best cock we ever saw, has never recovered his visit to the Palace, and before Saturday had to be removed to save his life. Third also a nice pen. Whites a middling class, all but the winners, which were good.

69. In Game Bantam single cocks, the first prize left nothing to complain of; but certainly the next best, if not the very best, in the class, was passed by altogether, being the winner at both Birmingham and London. It may have been on account of the sickle which was so disgracefully abstracted at Birmingham; if so, we can only say that disqualification for such a cause is the way to drive exhibitors into inserting new tails. Second and third both rather poor, and up to the last day of the Show the latter had not been claimed at two guineas.

The total number of entries was 1308, or just one more than at Manchester. The average quality may be partly gathered from the unusual amount of sales, which exceeded £300 in actual cash paid over, and included Mrs. Arkwright's third-prize Dorking pullets at £10; third-prize Dorking cock, £5; Mr. Heath's first-prize Buff pullets, £10 10s.; Mr. Ensor's first-prize Dark Brahma pullets at £20; Mr. L. Wright's commended pair ditto at £10; Mr. Curzon's Dark cock at £15 15s.; Mr. Morrell's second-prize Dark hens, £10; Mr. Beldon's cup Gold-pencilled cock at £6 6s., and his first-prize hens at the same price; Mrs. Seamons's Aylesbury Ducks at £5 5s.; and the cup Black Red Bantams at £10 10s.

Mr. Hewitt was to have been one of the Judges, but his sudden illness necessitated some revision of the intended arrangements, and gave the remaining three Judges rather hard work. Mr. Teebay judged the Brahmas, Spanish, Game, and Game Bantams; Mr. Teebay and Mr. Dixon the Hamburghs; and the Rev. G. Hodgson and Mr. Dixon the remaining classes, while the Pigeons were judged by Mr. T. J. Cottle, of Cheltenham.

The weather throughout was very bad, but we trust the heavy sales will to some extent make up for this drawback to the attendance.

Dorkings (Coloured).—*Cockerel.*—1, 3, and Cup, Mrs. E. Wheatley, Ingatestone. 2, L. Patton, Hillmore, Taunton. *hc*, Mrs. Arkwright, Sutton Scarsdale, Chesterfield; R. W. Beachey, Kingskerswell (2); L. Patton; R. C. Forster, Bath; W. W. Ruttlidge, Kendal. *c*, Mrs. Hind, Kendal.

Dorkings (Coloured).—*Pullets.*—1 and Cup, L. Patton. 2, Mrs. E. Wheatley. 3, Mrs. Arkwright. *hc*, G. J. Mitchell, Burton-on-Trent (2); L. Patton; R. Smalley, Lancaster.

Dorkings (Coloured).—*Cock.*—1, L. Patton. 2, J. Martin, Worcester. 3, Rev. J. D. Hoysted, Bradenstoke, Chippenham. *hc*, Mrs. M. D. Dunn, Hungerford. *c*, S. H. Stott, Rochdale.

Dorkings (Colonred).—*Hens.*—1, R. W. Beachey. 2, L. Patton. 3, Mrs. Arkwright. *hc*, Henry Lingwood, Barking, Needham Market; L. Patton (2); J. White, Warlaby, Northallerton. *c*, Rev. J. D. Hoysted.

Dorkings (Silver-Grey).—*Cockerel or Cock.*—1, O. E. Cresswell, Hanworth Rectory. 2, Hon. J. Massey, Limerick. 3 W. E. George, Stoke Bishop, Bristol. *hc*, Hon. H. Fitzwilliam, Wentworth Woodhouse; J. Longland, Grendon, Northampton.

Dorkings (Silver-Grey).—*Pullets or Hens.*—1, O. E. Cresswell. 2, W. W. Ruttlidge. 3, W. H. Denison. *hc*, W. E. George (2). *c*, J. Longland.

Dorkings (White).—*Cockerel or Cock.*—1, Miss Fairhurst, Ormskirk. 2, E. Williams, Henllys, Berriew. 3, J. Choyce, Atherstone.

Dorkings (White).—*Pullets or Hens.*—1, Mrs. M. A. Hayne, Fordington, Dorchester. 2 and *hc*, J. Choyce. 3, Mrs. Hartnell, Bridgewater.

Cochins (Cinnamon and Buff).—*Cockerel.*—1 and Cup, Lady Gwydyr, Stoke Park, Ipswich. 2, Mrs. Wilkin, Bootle. 3, H. Lloyd, jun. *hc*, W. A. Taylor, Manchester; Mrs. Wilkin; J. Watts, King's Heath; D. Young, Leamington; Mrs. P. V. M. Filleul, Weston-super-Mare. *c*, Mrs. Allsopp, Hindlip, Worcester; J. Dawes, Birmingham.

Cochins (Cinnamon and Buff).—*Pullets.*—1, G. Heath. 2, Lady Gwydyr. 3, L. Patton. *hc*, W. A. Taylor; Miss J. Milward, Newton St. Loe, Bristol; C. Bloodworth, Cheltenham. *c*, Henry Lingwood; A. Darby, Bridgnorth.

Cochins (Cinnamon and Buff).—*Cock.*—1, W. A. Taylor. 2, C. Felton, Birmingham. 3, R. Dawson, Beverley. *hc*, W. A. Burnell, Southwell (2); Mrs. Wilkin; J. Watts; Henry Lingwood; E. Thomas, Didsbury.

Cochins (Cinnamon and Buff).—*Hens.*—1, W. A. Burnell. 2, W. A. Taylor. 3, C. Felton. *hc*, J. Watts; A. Darby.

Cochins (Brown and Partridge).—*Cockerel.*—1, C. F. Wilson, Totton. 2, W. A. Taylor. 3, E. Leech. *hc*, E. Tudman, Whitchurch, Salop; G. Lamb, Compton, Wolverhampton. *c*, J. K. Fowler, Aylesbury; J. Stephens, Walsall.

Cochins (Brown and Partridge).—*Pullets.*—1, W. A. Taylor. 2, G. Lamb. 3, S. Stretch, Ormskirk.

Cochins (Brown and Partridge).—*Cock.*—1, T. M. Derry, Godney. 2, E. Tudman. 3, W. A. Taylor. *hc*, Mrs. R. White, Sheffield; J. Bloodworth.

Cochins (Brown and Partridge).—*Hens.*—1 and Cup, W. A. Taylor. 2, E. Tudman. 3, J. Stephens.

Cochins (White).—*Cockerel.*—1, Mrs. A. Williamson, Leicester. 2, E. Fearon, Whitehaven. 3, Miss E. A. Stephens, Dublin. *hc*, J. Bloodworth.

Cochins (White).—*Pullets.*—1, R. Smalley. 2, G. Shrimpton. 3, R. Chase, Wylde Green, Birmingham. *hc*, R. Chase; Mrs. A. Williamson; R. S. S. Woodgate. *c*, G. Shrimpton, Leighton Buzzard; J. Weeks, Bootle.

Cochins (White).—*Cock.*—1, A. J. E. Swindell, Kniver, Stourbridge. 2, W. E. George. 3, J. Sichel. *hc*, R. Smalley.

Cochins (White).—*Hens.*—1, G. Shrimpton. 2, J. Sichel. 3, R. Smalley. *hc*, W. E. George; E. Fearon; F. Brewer. *c*, S. Felgate, Ipswich.

Brahmas (Dark).—*Cockerel.*—1, H. P. Moor, Langley Burrell. 2, L. Wright, Bristol. 3, W. Adams, Ipswich. *hc*, A. O. Worthington, Burton-on-Trent; J. Kingdon, Calne; T. F. Ansdell, St. Helen's; J. H. Pickles, Birkdale, Southport; R. Brownlie, Kirkcaldy; W. Hargreaves, Bacup; Hon. Miss D. Pennant, Penrhyn Castle, Bangor; H. Lacy, Hebden Bridge; O. Claypole, Stoke Bishop. *c*, Rev. J. J. Evans, Brecon; A. O. Worthington; H. Ferris, Cleeve.

Brahmas (Dark).—*Pullets.*—1, E. Ensor, Bristol. 2, Lady Gwydyr. 3, Mrs Hurt, Alderwasley, Derby. *hc*, H. B. Morrell, Clyro; Rev. J. Bowen, Treffgarne; Lady Gwydyr; H. B. Morrell; L. Wright (2); Mrs. S. Vigor, Uxbridge; J. Watts; W. Whittaker, Belper; H. Lacy; J. K. Fowler. *c*, W. Whiteley, Sheffield; T. Pomfret, Preston.

BRAHMAS (Dark).—*Cock.*—1 and Cup, Hon. Mrs. A. B. Hamilton, Woburn. 2, H. Lacy. 3, Horace Lingwood, Creeting, Needham Market. *hc*, Rev. J. Bowen; J. Dawes; L. Wright; J. S. Tainton, Gloucester; E. Ensor; W. Whittaker; Hon. Miss D. Pennant.

BRAHMAS (Dark).—*Hens.*—1 and Cup, T. F. Ansdell. 2, H. B. Morrell. 3, Mrs. Hurt. *hc*, Rev. J. Bowen; Horace Lingwood; W. Gamon; J. Watts; H. Lacy.

BRAHMAS (Light).—*Cockerel.*—1, M. Leno. 2, W. T. Storer, Brewood. 3, H. M. Maynard, Holmewood, Isle of Wight. *hc*, A. O. Worthington; J. Watts; W. T. Storer; F. Crook; J. R. Rodbard, Wrington, Bristol. *c*, H. M. Maynard.

BRAHMAS (Light).—*Pullets.*—1, F. Crook. 2, T. A. Dean, Moreton-on-Lugg. A. O. Worthington. *hc*, C. F. Wilson; E. Hoare, Wolston (2); J. Watts; J. Bloodworth; Mrs. S. Vigor.

BRAHMAS (Light).—*Cock.*—1, Mrs. A. Williamson. 2, H. Dowsett, Plesbey, Chelmsford. 3, H. M. Maynard. *hc*, F. Crook, Forest Hill; W. J. Craddock, Maindee, Newport, Mon.

BRAHMAS (Light).—*Hens.*—1, J. R. Rodbard. 2, F. Crook. 3, H. M. Maynard. *hc*, A. O. Worthington; Mrs. A. Williamson. *c*, J. Pares, Pestford, Guildford.

SPANISH.—*Cockerel.*—1 and Cup, F. James, Peckham Rye. 2, E. Jones, Clifton. 3, Mrs. Allsopp. *hc*, E. Jones (3); Boulton & Gliddon, Bristol; G. Tonkin, Bristol; J. Barry, Totterdown, Bristol. *c*, Boulton & Gliddon.

SPANISH.—*Pullets.*—1 and *c*, E. Jones. 2, H. Lane, Bristol. 3, T. Bamfield, Brandon Hill, Bristol. *hc*, Boulton & Gliddon; Miss E. Browne; E. Jones (2); J. R. Rodbard; T. Bush, Cleeve, Bristol.

SPANISH.—*Cock.*—1 and 2, H. Lane. 3, Miss E. Browne, Chard. *c*, Mrs. Allsopp.

SPANISH.—*Hens.*—1 and Cup, T. Bamfield. 2, H. Lane. 3, Hon. Miss D. Pennant. *c*, J. R. Rodbard.

FRENCH FOWLS.—*Cockerel or Cock.*—1, W. O. Quibell, Newark (Crève-Cœur). 2, R. B. Wood, Uttoxeter (Houdan). 3, W. R. Park, Melrose (Crève-Cœur). *hc*, C. H. Smith, Radcliffe-on-Treut (Crève-Cœur); Rev. J. Richardson, Sandy (Crève-Cœur); W. Tippler, Chelmsford; W. Boutcher, Notting Hill (Crève-Cœur); W. O. Quibell (Houdan).

FRENCH FOWLS.—*Pullets or Hens.*—1, W. R. Park (Crève-Cœur). 2, Hills and Co., Brighton (Houdan). 3, Hon. C. W. Fitzwilliam (La Flèche) *hc*, H. Wyndham, Brockhampton, Worcester (Creve-Cœur); W. O. Quibell (Crève-Cœur); J. K. Fowler.

HAMBURGHS (Gold-spangled).—*Cockerel or Cock.*—1, W. Driver, Keighley. 2, H. Beldon, Goitstock, Bingley. 3, J. Buckley, Taunton, Ashtou-under-Lyne. *hc*, W. de Winton, Durdham Down, Bristol; J. Medway, Newton Abbott; T. Mayo, Wolverhampton; Miss C. E. Palmer, Lighthorne, Warwick; W. A. Hyde, Ashton-under-Lyne; J. H. Macnab, Barrhead. *c*, C. Bloodworth.

HAMBURGHS (Gold-spangled).—*Pullets or Hens.*—1, J. Buckley. 2, J. Ogden. 3, W. de Winton. *hc*, W. Driver; J. Ogden, Hollinwood; H. Beldon; Mrs. J. Pattison. *c*, C. Parsons, Wolverhampton; W. A. Hyde.

HAMBURGHS (Silver-spangled).—*Cockerel or Cock.*—1 and Cup, H. Beldon. 2, Miss E. Browne. 3, J. H. Howe. *hc*, N. Barter, Plymouth. *c*, Miss E. Browne; J. Newick, Taunton.

HAMBURGHS (Silver-spangled).—*Pullets or Hens.*—1 and Cup, H. Beldon. 2, J. Newton, Silsden, Leeds. 3, G. C. Holt, Lawton. *hc*, Miss E. Browne; J. H. Howe, Denton; H. Pickles, jun., Earby.

HAMBURGHS (Gold-pencilled).—*Cockerel or Cock.*—1 and Cup, H. Beldon. 2, W. R. Park. 3, F. Pittis, jun., Newport House, Isle of Wight. *hc*, Rev. A. L. Willett; N. Barter; B. Bee, Goosnargh; F. Pittis; J. Preston, Allerton, Bradford. *c*, J. Walker, Ripley; H. H. Tompson.

HAMBURGHS (Gold-pencilled).—*Pullets or Hens.*—1, H. Beldon. 2, J. Walker. 3, J. K. Fowler. *hc*, F. Pittis; R. R. Parker, Ipswich. *c*, J. Preston.

HAMBURGHS (Silver-pencilled).—*Cockerel or Cock.*—1, H. Pickles, jun. 2, J. Bairstow, Fearncliffe, Bingley. 3, H. Beldon. *hc*, H. Smith, Moreton Banks, Keighley.

HAMBURGHS (Silver-pencilled).—*Pullets or Hens.*—1, H. Pickles, jun. 2, J. Bairstow. 3, N. Barter. *c*, J. Walker.

HAMBURGHS (Black).—*Cockerel or Cock.*—1, N. Marlor, Deuton. 2, Rev. W. Serjeantson, Acton Burnell. 3, W. A. Taylor. *hc*, Hon. and Rev. F. Dutton, Burford.

HAMBURGHS (Black).—*Pullets or Hens* —1 and Cup, Rev. W. Serjeantson. 2, N. Marlor. 3, Hon. and Rev. F. Dutton. *hc*, C. Sidgwick, Keighley; J. M. Kilvert, Wem.

GAME (Black-breasted Reds).—*Cockerel or Cock.*—1 and Cup, S. Beighton, Farnsfield, Southwell. 2, J. Forsyth, Wolverhampton. 3, W. H. Stagg, Netheravon. *hc*, C. H. Ames, Henley; J. Frith; S. Beighton. *c*, T. Mason, Green Ayre, Lancaster.

GAME (Black-breasted Reds).—*Pullet or Hen.*—1, J. Laming. 2, W. J. Pope. 3, W. H. Stagg. *hc*, W. J. Pope, Biggleswade (2); W. H. Stagg (2); W. Boyes. *c*, J. Laming, Cowhurn, Spalding; Mrs. Arkwright.

GAME (Brown-breasted Reds).—*Cockerel or Cock.*—1 and Cup, W. Boyes. 2, J. Laming. 3, W. Sowerbutts, Nantwich. *hc*, J. Laming; G. Doubleday, Upton, Southwell; T. Mason; G. Lunt, Market Drayton; J. W. Jones, Newport, Monmouthshire.

GAME (Brown-breasted Reds).—*Pullet or Hen.*—1 and Cup, S. Matthew, Stowmarket. 2, W. Boyes. 3, T. Burgess, Burleydam. *hc*, W. Perrin, Bristol; W. Sowerbutts.

GAME (Duckwings and other Greys and Blues).—*Cockerel or Cock.*—1, S. Matthew. 2, J. Laming. 3, J. Frith, Chatsworth. *hc*, W. Boyes; J. Laming.

GAME (Duckwings and other Greys and Blues).—*Pullet or Hen.*—1, W. Boyes. 2, E. Bell. 3, T. West. *hc*, W. H. L. Clare, Try Cross, Atherstone. *c*, J. Laming; J. Jeken, Eltham.

GAME (Any other variety).—*Cockerel or Cock.*—1, J. Frith (Pile). 2, H. C. and W. J. Mason (Pile). 3, S. Matthew (Pile). *hc*, J. Tiley; J. Laming; E. Holland.

GAME (Any other variety).—*Pullet or Hen.*—1 and 3, J. Frith. 2, Rev. G. S. Cruwys, Cruwys Morchard, Tiverton. *hc*, G. Lunt (Pile); W. H. L. Clare.

GAME BANTAMS (Black-breasted Reds).—1 and Cup, E. Payne, Cardiff. 2, J. W. Morris. 3, Williams & Straw, Farnsfield, Southwell. *hc*, Miss E. S. Cornwall, Wotton-under-Edge; J. H. Nicholls, Lostwithiel; J. R. Robinson, Sunderland; R. Brownlie.

GAME BANTAMS (Brown-breasted Reds).—1 and Cup, T. C. & E. Newbitt, Epworth. 2, W. Adams. 3, H. Shumach.

GAME BANTAMS (Any other variety).—1, H. Shumach. 2 and *hc*, T. C. & E. Newhitt. 3, J. Eaton, Southwell (Pile).

GAME BANTAMS (Any variety).—*Cock.*—1 and Cup, J. R. Robinson. 2, Mrs. H. Tongue, Farnsfield, Southwell. 3, H. P. Leech. *hc*, J. W. Morris, Rochdale; T. Davies, Bristol; Mrs. E. Crawford, Farnsfield; J. H. Howe; J. H. Glossop, jun., Weston-super-Mare.

BANTAMS (Gold and Silver Sebrights).—1, 2, and Cup, M. Leno, Markyate Street. 3, J. Watts. *hc*, J. Watts; B. C. Greenhill, Bridgewater; Rev. G. S. Cruwys.

BANTAMS (Black Clean-legged).—1, J. Walker. 2, E. Cambridge, Bristol. 3, J. Walker. *hc*, Mrs. T. Bush, Bristol; W. A. Taylor; H. M. Maynard, Holmewood, Isle of Wight; H. Beldon, Goitstock; T. Davies; H. Pickles, jun.

BANTAMS (White Clean-legged).—1 and 2, S. & R. Ashton, Mottram. 3, Rev. F. Tearle, Gazeley Vicarage, Newmarket.

POLISH (Any variety).—*Cockerel or Cock.*—1, 2, and Cup, G. C. Adkins, Birmingham. 3, D. Mutton, Brighton (White Crest). *hc*, M. Nicholls, Peel, Isle of Man; W. Gamon, Chester; G. C. Adkins; H. Beldon; T. Dean.

POLISH (Any variety).—*Pullets or Hens.*—1 and Cup, G. C. Adkins. 2, H. Beldon. 3, Mrs. J. M. Proctor, Hull. *hc*, Mrs. J. M. Proctor; J. Hinton, Warminster; G. C. Adkins (2).

ANY OTHER VARIETY.—*Cockerel or Cock.*—1, J. Hinton. 2, Mrs. Llewellyn, Bridgend (Sultans). 3, S. Rooth, Chesterfield (Malay). *hc*, Miss C. E. Palmer (Scotch Dumpies). *c*, R. Hawkins, Bristol (Andalusian); F. Wilton (Black Cochin).

ANY OTHER VARIETY.—*Pullets or Hens.*—1, J. W. Brown, Bristol (Black Minorcas). 2, J. Whittaker (Dominiques). 3, H. Beldon. *hc*, Lady Gwydyr (Silkies); Mrs. Llewellyn (Sultans); J. Watts. *c*, W. B. Payne, Shrewsbury (Malay).

DUCKS (White Aylesbury).—1, E. Leech, Rochdale. 2, J. K. Fowler, Aylesbury. 3, Mrs. M. Seamons, Aylesbury. *hc*, Lady Gwydyr.

DUCKS (Rouen).—1 and Cup, L. Patton. 2, W. Gamon. 3, S. H. Stott. *hc*, H. B. Smith, Broughton, Preston; L. Patton (2); J. N. C. Pope, Stoke Bishop; J. K. Fowler.

DUCKS (Black East Indian).—1 and Cup, S. Burn, Whitby. 2 and *hc*, W. E. George. 3, Rev. W. Serjeantson.

DUCKS (Any other variety).—1, S. Burn (Mandarin). 2 and 3, H. B. Smith (Carolinas and Sheldrake). Whole class highly commended.

GEESE (Any variety).—1 and Cup, Rev. G. Hustler, Stillingfleet Vicarage, York (White). 2, Mrs. M. Seamons. 3, S. H. Stott. *hc*, J. Baily, jun., Mount Street, London (Bernicle, Egyptian, and Toulouse) (3); C. Homfray, Glen Usk, Caerleon (Spanish); J. K. Fowler.

TURKEYS (Any variety).—1 and Cup, F. Lythall, Banbury (American and Cambridge. 2, L. Patton. 3, Rev. N. J. Ridley. *hc*, L. Patton; Miss J. Millward (Cambridge).

PIGEONS.

CARRIERS (Blue or White).—1 and Cup, J. Watts. *vhc*, J. C. Ord, Pimlico. *hc*, R. Fulton, Deptford.

CARRIERS (Black or Dun).—1 and Cup, E. Horner, Harewood. 2 and *hc*, R. Fulton. *vhc*, F. T. Wiltshire, Croydon (Black); G. S. Hockey; H. Yardley, Birmingham.

POUTERS.—*Cocks.*—1, 2, and Cup, F. Gresham, Strefford. *vhc*, R. Fulton. *c*, R. P. Moon, Driffield. *Hens.*—1, F. Gresham. 2 and *c*, R. Fulton. *hc*, E. T. Dew, Weston-super-Mare (Blue).

TUMBLERS (Almond).—1 and 2, R. Fulton. *vhc*, F. T. Wiltshire (2); J. Ford, Monkwell Street, London. *c*, E. T. Dew.

JACOBINS.—1, R. Fulton. 2, E. Horner. *c*, W. B. Van Haansbergen, Newcastle-on-Tyne; R. Fulton.

BARBS.—1 and Cup, R. Fulton. 2, J. Fielding, jun., Rochdale. *hc*, J. C. Ord J. Baily & Son, Mount Street, London. *c*, E. Horner.

TUMBLERS (Any other variety).—1, J. Ford. 2, R. Fulton. *c*, J. Fielding, jun.

FANTAILS.—1 and Cup, C. Bulpin, Bridgewater. 2, J. F. Loversidge, Newark. *vhc*, J. Elgar, Newark. *c*, J. Baily & Son.

TRUMPETERS.—1, P. H. Jones, Fulham. 2, E. Horner. *hc*, C. Bulpin.

OWLS (English).—1, P. H. Jones. 2, C. Bulpin.

NUNS.—1, T. A. Dean. 2, C. Bulpin.

TURBITS.—1, G. South. 2, E. T. Dew. *hc*, T. Waddington, Feniscowles, Blackburn. *c*, O. E. Cresswell, Hanworth Rectory; G. H. Gregory, Taunton; J. Fielding, jun.; H. Yardley.

DRAGOONS.—1, J. Holland, Manchester. 2, W. Bishop, Dorchester. *vhc*, G. South. *hc*, J. Watts. *c*, W. W. Grainger, Clifton; W. H. Mitchell; H. Yardley.

ANTWERPS.—1, E. Horner. 2, C. Bulpin. *hc*, H. Yardley. *c*, C. F. Copeman, Birmingham.

ANY OTHER VARIETY.—1, J. Bowes, Herne Bay (Archangels). 2, H. Yardley. *vhc*, E. Horner; S. A. Wyllie, East Moulsey (Runts). *c*, T. Waddington.

KIRKCALDY POULTRY AND CANARY SHOW.

THE Fife and Kinross Ornithological Society held its twentieth annual Show in the Corn Exchange, Kirkcaldy, on the 2nd and 3rd inst. Year by year these exhibitions have been steadily increasing in the number of birds shown, and improving in the quality of the stock brought forward. The entries this year considerably exceeded those of any former year. The list of exhibitors embraced most of our Scotch breeders, whose names are now widely known, as well as many prominent English prizetakers, the Emerald Isle also contributing her quota. A noticeable feature in the classes is the increase of Pigeons and the decrease of Canaries, there being a larger number of the former and a smaller number of the latter than at any former show. Brahmas, too, have of late years been superseding Dorkings, but we were glad to observe an increase in the number of Dorking pens this year.

Game and Game *Bantams* were the largest classes exhibited. Fife was famous for her fighting Game in the days of yore, and now that exhibiting has taken the place of fighting she is not behind her former self. There were fifty-eight pens of Game, eighty-three of Game Bantams, and in all the classes of these the quality of the birds was excellent. The competition was a close one, and the Judge must have had some trouble in making his awards. There was not a bad pen in the Hall, and had "YORKSHIRE," who criticised the Game at Leeds, been here, he would have found all the essential characteristics of the breed that he seems to have there missed so much. There was the firm compact body, well-developed muscular thigh, strong bill and snake-like head, with the bold defiant carriage, that give these birds their sprightly bearing. *Dorkings* were more numerous than for some years past, and, in the opinion of the Judge, of finer quality than those shown at Birmingham and Manchester. *Cochins* were on the whole a good class; and the first-prize cockerel shown by Mrs. Oswald, of Dunnikier, is deserving of special notice as a bird of rare excellence. The first-prize hens shown by Mr Green, Belfast, were also very fine. *Brahmas* were a large and good class, the cocks predominating in numbers, but we thought the hens were of better quality. The pair of Mr. Raines, Stirling, which won the cup, were magnificent birds. *Spanish* were a smaller class than usual; the hens taking the cup were in all points excellent birds. *Hamburghs* mustered strongly, Golden-pencilled and Spangled being much superior to the Silver classes. Fowls, "Any other variety," and *Ducks* were both poor classes.

There was a marked improvement since last year in the *Pigeons*. Pouters were a very good class, the silver cup being carried off by a remarkable pair of Whites belonging to Mr. McGill, Elie, who took also the silver cup at the late Edinburgh Columbarian Show with the same cock. Carriers were a more mixed lot, some of them being of considerable merit, others very poor. Fantails showed to more advantage, there being some excellent birds amongst them; good, well-spread, compact tails, with fine carriage and tremulous motion. There would have been a different distribution of prizes, however, had the matching of the pairs been more judicious. Nuns were a good class honestly shown; there had evidently been no tampering with them, but the matching was not in all cases first-rate. Jacobins were an excellent

class, the first-prize particularly so, and none of them bad. Turbits and Owls were on the whole a splendid class. The foreign Owls shown by Mr. Paterson, Melrose, are deserving of special notice, they being very fine birds indeed. Tumblers were a small class and of no particular merit, with the exception of Mr. Yardley's first-prize pair. Barbs were not numerous, and they were generally poor, excepting the first-prize pair belonging to Mr. Yardley. The Any variety class was numerous, varied, and generally very fine.

The north end of the Hall presented a gay appearance with its rows of beautiful singing birds, principally belonging to the "Scotch Fancy," hung in neat cages on a green cloth background.

The Show, altogether, was of a most satisfactory nature, and the arrangements reflect great credit on the managing Committee. It was visited during both days by a large number of people.

GAME.—*Cock.*—Cup, J. W. Will. Errol 2, J. Stark, Crossgates. 3, J. Anderson, Blairgowrie. *hc*, R. Stewart, Kelty, Blairadam; P. Campbell, Old Whatnew Deer. *c*, C. Jamieson, Forfar. *Reds.*—1, R. Stewart. 2 and 3, W. Meldrum, Forfar. *hc*, J. W. Will; J. Stark; J. Wishart, Kirkcaldy; J. H. Herriot, Kirkcaldy; J. Liveston, Forfar. *Chickens.*—1, J. W. Will. 2, W. Meldrum. 3, J. Wishart. *hc*, T. W. Mitchell, Perth; W. Chambers, Leslie; C. Jamieson; J. Liveston; A. Liveston, Forfar. *c*, J. Blair, Dollar. *Any other colour.*—1, Mrs. Harley, Edinburgh. 2, J. W. Will. 3, J. Anderson, Kirkcaldy. *hc*, A. Spalding, Kinginnie, Dundee; H. Geodall. *Chickens.*—1, J. Elder, Kirkcaldy. 2 and 3, J. Anderson.

DORKINGS (Any variety).—*Cock.*—1, D. Gellatly, Meigle. 2, Mrs. Morrison, Stirling. 3, T. Raines, Bridge Haugh, Stirling. *hc*, D. Gellatly; T. Raioes; Mrs. Tullis, Markinch. *c*, D. Annan, Cupar; Mrs. Macdonald, Errol. *Hens.*—1, A. Haggart, Leslie. 2, D. Annan. 3, D. Gellatly. *hc*, D. Gellatly; T. Raines (2); A. Haggart.

COCHIN-CHINA.—*Cock.*—1, Mrs. Oswald, Dunnikier. 2, J. Cowman, Whitehaven. 3, J. H. Dawes, Birmingham. *hc*, A. Williamson, Oxgang, Grangemouth; Mrs. Oswald; J. Cowman; F. H. Green, Windsor, Belfast. *c*, W. Linton, Selkirk. *Hens.*—1, F. H. Green. 2, W. Linton. 3, Mrs. Oswald.

BRAHMA POOTRA.—*Cock.*—1, Mrs. Gillison, Glasgow. 2 and *c*, R. Brownlie, Kirkcaldy. 3, A. Williamson. *hc*, Miss J. Morrison; J. M'Donald; T. Raines. *Hens.*—Cup, T. Raines. 2, Mrs. Gillison. 3, J. Meldrum, Kirkcaldy. *hc*, J. Cowman; F. H. Green, Kirkcaldy; H. Connell.

SPANISH.—*Cock.*—1, J. Soutar, Carnoustie. 2, A. Shepherd, Meigle. 3, R. Somerville, Edinburgh. *Hens.*—Cup, A. Shepherd. 2 and 3, R. Somerville.

HAMBURGHS.—*Spangled.—Cock.*—Cup, J. W. Will. 2 and 3, J. Bell, Cowderbeath. *hc*, W. M. Elder, Leslie. *Hens.*—1, J. W. Will. 2, A. Crosbie, Gattonside, Melrose. 3, R. Dickson, Selkirk. *hc*, Mrs. Harvey; G. Caithness. *Pencilled.—Cock.*—1, J. W. Will. 2, J. M. Campbell, New Byth. 3, W. R. Park, Melrose. *hc*, D. Normand, Kennoway; R. Coupar, Falkland; A. W. Penman, Leslie. *Hens.*—1, A. Pratt, Kirkcaldy. 2, Mrs. Harvey. 3, W. R. Park. *hc*, R. Couper.

GAME BANTAMS.—*Reds—Cock.*—Cup, J. W. Will. 2, Master W. Brownlie, Kirkcaldy. 3, E. Harwood, Accrington. *hc*, Mrs. Abel, Forfar; T. Raines; W. Scott, Jedburgh; J. M. Campbell. *Hens.*—1, Miss N. Brownlie. 2, T. Raines. 3, J. Archibald, Earlston. *hc*, Mrs. Abel; G. Anderson; R. Frew, Kirkcaldy; J. Ross, Pathead. *c*, T. W. Mitchell; G. K. Scobie, Dunfermline. *Any other Colour.—Cock.*—1 and 2, W. Scott. 3, J. Archibald. *hc*, W. Clark, Kirkcaldy; Miss Brownlie; W. Henderson, Kirkcaldy; D. Gillespie. *Hens.*—1, R. Stewart. 2, A. T. Milla, Kirkcaldy. 3, W. Scott.

BANTAMS (Any other variety).—1, Master A. Frew (Silver-laced). 2, H. Yardley, Birmingham. 3, J. Rutherford, Auchtermuchaty.

ANY OTHER VARIETY.—1, W. Paterson, Colinsburgh (Golden Polands). 2, D. Gellatly (Houdans). 3, J. Rutherford (Houdans).

DUCKS (Any variety).—1, R. Dickie, Burnside, Alva. 2, A. Haggart. 3, A. Spalding.

SELLING CLASS (Any variety).—1 and *c*, J. Stoutar (Spanish and Houdans). 2, A. Small, Glasgow (Greys) 3, F. H. Green (Cochins). *hc*, D. Gellatly (Dorkings).

PIGEONS.

POUTERS.—Cup, J. M'Gill, Elie. 2, J. Morrison, Morningside, Edinburgh. 3, J. Grant, Edinburgh. *hc*, W. Rutherford, Edinburgh; H. Bontbron, Edinburgh; J. M'Gill.

CARRIERS.—1, H. Yardley. 2, M'Gill Skinner, Edinburgh. 3, A. Lockbart, Kirkcaldy.

FANTAILS.—1, A. Smith, Broughty Ferry. 2, J. G. Spence, Edinburgh. 3, J. F. Loversidge, Newark. *hc*, A. Lockhart; E. Hope, Kirkcaldy.

TUMBLERS.—1, H. Yardley. 2, F. D. Wood, Edinburgh. 3, J. Bruce, Dunfermline.

NUNS.—1, Miss Drummond, Megginch Castle, Errol. 2, R. Paterson. 3, J. Bell. *hc*, R. Frew. *c*, W. B. Van Haansbergen, Newcastle.

JACOBINS.—1, W. B. Van Haansbergen. 2, H. Yardley. 3, J. G. Spence. *hc*, R. Paterson; T. W. Kilburn; W. B. Van Haansbergen.

TURBITS OR OWLS.—1 and 2, R. Paterson (Owls and Turbits). 3, H. Yardley (Owls). *hc*, J. G. Spence (Owls).

BARBS.—1, H. Yardley. 2 and 3, Withheld.

ANY OTHER VARIETY.—1, W. B. Van Haansbergen (Trumpeters). 2, A. Crosbie (Letz). 3, J. Grant, Edinburgh (Magpies). *hc*, T. Imrie (Archangels); T. W. Kilburn (Frillbacks).

CANARIES.

YELLOW.—*Cocks.*—1, R. Hunter, Longour, Tillicoutry. 2, J. Small, Edinburgh. 3, W. Muirhead, jun., Alloa. *Hen.*—1, J. Hogg, Oakley, Dunfermline. 2, W. Innes, Kirkcaldy. 3, R. Farmer, Kirkcaldy.

BUFF.—*Cock.*—1, G. Spence, Dysart. 2, D. Allan, Leith. 3, J. Hunter, Kirkcaldy. *Hen.*—1, J. Lawson, Dundee. 2 and 3, W. Muirhead, jun.

YELLOW FLECKED.—*Cock.*—1, J. Sime, Grahamstown, Falkirk. 2 and 3, D. Allan. *Hens.*—1, R. Hunter. 2, G. Spence. 3, D. Duncan, Carron.

BUFF FLECKED.—*Cocks.*—1, C. Smith. 2, R. Farmer. 3, R. Brown. *Hens.*—1, J. Lawson. 2, D. Allan.

GOLDFINCH MULES (Yellow or Buff).—1, 2, and 3, J. Robertson, Aberdour.

JUDGES.—*Poultry:* Mr. R. Teebay, Fulwood, Preston. *Pigeons:* Mr. J. Millar, Glasgow. *Canaries:* Mr. J. M'Gill, Elie.

PAISLEY ORNITHOLOGICAL SHOW.

THE seventeenth annual Exhibition was held on the 2nd and 3rd inst., in the Drill Hall, which was closely packed with cages, there being upwards of 1500 birds for competition. The show was admirable. *Game* and *Hamburghs* were present in great numbers. Perhaps there has never been a larger and better exhibition of *Pigeons*. The great interest, however, was centred in the Canary department, in which were 281 entries. Altogether the Show was a great success, and far exceeded those of previous years.

SPANISH.—1, J. Dunlop. 2, A. Walker, Kilmarnock. 3, J. Hamilton, Saltcoats. 4, Miss Rae, Garngad Hill, Glasgow. *hc*, J. M'Innes. *c*, J. Gray, Airdrie. *Chickens.*—1 and Special, A. Yuill, Airdrie. 2, W. Peden, Craighead. 3, W. C. Hardie, Carron. 4, Foster, Green, & Co., Belfast. *hc*, Mrs. Gillison, Milngavie. *c*, J. Hamilton. *Hens.*—1, A. Shiphard, Keggle, Yorkshire. 2, W. C. Hardie. 3, W. Peden. 4, J. M'Innes. *hc*, R. Campbell, Glenfirn. *c*, J. R. Rennards, Helensburgh.

DORKINGS.—1, Mrs. Alston, Craighead. 2, A. Grant, Kilbarchan. 3, A. M'Dougald, Moffat, Airdrie. 4, J. Dollar, Kirkintilloch. *hc*, J. Paul, Glasgow. *Chickens.*—1 and 2, Mrs. Alston. 3 and 4, Z. H. Heys, Springfield, Barrhead. *White.*—1, J. Bell, Dalmellington. 2, R. Farrow, Dalmellington. 3, R. Cron, Dalmellington. 4, Mrs. Tudhope, Meigleriggs. *Hens.*—1, A. M'Donald. 2, R, Campbell. 3, Mrs. Alston. 4, Mrs. Gillison. *hc*, W. Wotherspoon, Castlehead; A. Shiphard.

COCHIN-CHINA —1 and Special, W. Peden. 2, J. H. Green, Belfast. 3, J. Gray. 4, J. Pollock, Bushby. *hc*, H. Paton, Largs.

BRAHMA-POOTRA.—1 and Special, J. H. Green. 2 and Special, Mrs. Gillison. 3, Mrs. Alston. 4, A. Robertson, Kilmarnock. *hc*, R. Abercrombie, Paisley.

SCOTCH.—1, J. Paul. 2, J. Meiklem, Hamilton. 3 and Special, A. Dunlop. 4, J. Kirkpatrick, Waterton, Patna. *c*, R. Cumming, Beith; J. Meiklem.

HAMBURGHS.—*Gold-spangled.*—1 and Special, J. H. M'Nab, Barrhead. 2, R. Mackie, Stewarton. 3, J. Holbourn, Stewarton. 4, A. Robertson. *hc*, H. Picklea, Earby. *Silver-spangled*—1, J. Stewart, Barreead. 2, H. Colligan, M.D., Paisley. 3, R. Mackie. 4, A. Glen, Paisley. *Hens.*—1, R. Bruce, Bushby. 2, A. Stirling, Barrhead. 3, J. H. M'Nab. 4, H. Pickles. *Gold-pencilled.*—1 and Special, H. Picklea, Earby. 2, W. Creelman, Kilmarnock. 3, W. Peden. 4, J. Smith, Stewarton. *hc*, D. Watson, West Glen. *Silver-pencilled.*—1, H. Colligan, M.D. 2, H. Pickles. 3, Miss Lindsay. 4, J. Sharp, Johnstone. *Hens.*—1, R. M'Nab, Cardonald. 2, Miss M. Ingram, Paisley. 3, H. Colligan, M.D. 4, J. Jack, West Kilbride.

TOPPED POLANDS.—1, J. Forsyth, Carmile. 2, W. Hardie. 3, H. Pickles. 4, J. Hunter, Greenock.

GAME.—*Black-breasted and other Reds.*—1, J. M'Nab. 2, J. M'Laughlan, Paisley. 3 and *hc*, J. Waddell, Airdrie. 4, C. Jamieson, Forfar. *c*, J. Fraser, Dalmellington; W. Martin, Barrhead. *Any other Colour.*—1, D. Harley. 2, T. Davidson, Longtown. 3, R. Andrew, Barrhead. 4, J. Gray. *hc* and *c*, P. M'Farlane, Pollockshaw. *c*, J. Gray.

ANY OTHER VARIETY —1, J. Allan, Kilbirnie. 2, B. M. Knox, Kilbirnie. 3, J. Fulton, Beith. 4, A. Williamson, Grangemouth.

DUCKS.—*Aylesbury* —1, W. Mulligan, Springfield, Belfast. 2, Z. H. Heys. 3, A. Robertson. 4, R. Campbell. *Rouen.*—1, W. Mulligan. 2 and 3, J. Pollock, Mearns. 4, A. Robertson.

BANTAMS.—*Game.*—1, Z. H. Heys. 2, Bellingham & Gill, Burnley. 3, J. Mitchell, Perth. 4, T. R. Hamilton, Ayr. *c*, J. Gray. *Black.*—1, A. Mitchell, Paisley. 2, S. & R. Ashton, Mottram. 3, J. Waddell. 4 J. Wilson, Beith. *Any other Variety.*—1, S. & R. Ashton. 2, J. D. S. Crawford, Kilbarchan. 3, J. Waddell. 4, A. Grant, Kilbarchan. *hc*, A. Yendell, Galston; H. Yardley, Birmingham. *c*, T. Craig, Paisley.

SELLING CLASS.—1, Mrs. Alston. 2, H. Paton (Cochin-China). 3, C. Wilson (Hamburghs). 4, J. Gow, Kilbarchan. *c*, D. Skeoch, Stewarton; H. Fleming, Belfast (Hamburghs).

PIGEONS.

POUTERS.—*Blue.*—1 and 2, J. Millar, Glasgow. 3, J. Coebran, Glasgow. *hc*, W. Nelson, Johnstone. *Black.*—1 and 3, J. Millar. 2, J. Sharp, Johnstone. *White.*—1, H. Yardley. 2 and 3, J. Sharp. *hc*, G. B. Philips, Ayr. *Any other Colour.*—1, J. Muir, Kilmarnock. 2, J. Millar. 3, J. Cochon, Glasgow.

TUMBLERS.—*Short-faced.*—1 and 3, T. Wilson. 2, H. Yardley. *hc*, J. Sharp. *Any other Variety* —1 and 2, R. Blair, Johnstone. 3, W. Reid, Lochwinnoch. *hc*, J. Wallace, Airdrie.

CARRIERS.—1, H. Yardley. 2, J. Mair. 3, J. Richmond, Kilmarnock.

FANTAILS.—1, T. Wilson. 2, J. Galt, Kilbirnie. 3, J. Sharpe. *hc*, W. Anderson, Glasgow.

JACOBINS.—1 and 3, J. R. Rennards. 2, J. Sharpe. *c*, H. Yardley.

NUNS.—1, J. Murray, Darvel. 2, T. Imrie, Ayr. 3, G. Gilchrist, Darvel. *hc*, J. Lambie, New Cumnock.

TURBITS—1, J. Sharp. 2, J. R. Rennards. 3, R. Gibson, Kilmarnock.

COMMON.—1, C. Kerr, Beith. 2, J. Wilson. 3, R. Stevenson, Beith.

ANY OTHER VARIETY.—1, J. Mair. 2, H. Yardley. 3, J. Sharp. *hc*, J. Millar. *c*, R. M. Banks, Ayr.

SELLING CLASS.—1, R. Niven, Paisley. 2, J. Murray, Darvel. 3, J. White, Paisley.

CANARIES.

PAIR OF CLEAN.—1 and 3, A. Kelly, Paisley. 2, J. Gray. 4, T. Buchanan, Glasgow.

YELLOW.—*Cock.*—1, J. Meldrum, Glasgow. 2, W. Love, Kilbirnie. 3, J. Barr, Glasgow. 4, T. Fernie, Paisley. *Hen.*—1, R. Cron. 2, W. Wright, Greenock. 3, W. Webster, Kilbarchan. 4, R. Houston, Kilbirnie.

BUFF.—*Cock.*—1 and Special, J. Conn, Alnwick Lodge. 2, W. Paterson, Alnwick Lodge. 3, J. Richmond, Kilmarnock. 4, J. Crawford, Dalry. *Hen.*—1, R. Calderwood, Kilmarnock. 2, M. Barr, Paisley. 3, A. Millar, Rutherglen. 4, J. Gibson.

PIEBALD.—1, A. Kelly. 2, J. Gray. 3, R. Wood, Paisley. 4, A. M'Keasock, Dalry. *Yellow Cock.*—1, J. Pettigrew, Carluke. 2, R. Murray. 3, A. Millor, 4, J. Barr. *Hen.*—1, N. M'Lean, Glasgow. 2, D. Haldane, Alnwick Lodge. 3, A. Crawford, Johnstone. *Buff Cocks.*—1 and Special, J. Pettigrew. 2, A. Lees, Beith. 3, J. Gray. 4, W. Paterson. *Hens.*—1, A. Crawford. 2, G. Burgess, Dumbarton. 3, A. Reid. 4, J. White.

GOLDFINCH.—1, J. Muir, Dalry. 2, T. Reive, Glasgow. *Mules.*—1, J. Gray, Airdie. 2, R. Bell, Paisley.

HOME OR FOREIGN BIRDS.—1, W. Spiers, Overton, Johnstone. 2, A. Liggatt, Paisley. *hc*, A. Eaglesim, Paisley.

JUDGES.—*Poultry:* Mr. J. Stewart, Helensburgh; Mr. J. M'Lachlan, Paisley; Mr. W. Farquhar, Barrhead; Mr. J. Lindsay, Stewarton; Mr. J. M'Innes, Paisley; and Mr. R. Calderwood, Kilmarnock. *Pigeons:* Mr. J. Muir, Milport. *Cage Birds:* Mr. J. Mair, Kilmarnock; Mr. A. Mitchell, Paisley; Mr. G. Grant, Glasgow; Mr. J. Kelly, Johnstone; Mr. J. White, Paisley; and Mr. R. Paterson, Howwood.

RABBITS AT THE YORK SHOW.

No doubt many of your readers, especially those in the Rabbit fancy, will remember the letters in "our Journal" on the above subject. Of one writer, who signed himself "J. B.," the greatest objection to showing at York was the fancy varieties having to be shown in pairs, he being afraid of his does being in young after such a show. But upon a letter appearing signed "M. Millington, *York*," stating the fancy varieties were to be shown in separate pens, I (who am "J. B.") was induced to send five pairs. They arrived home perfectly safe, but to my extreme surprise and indignation I found my finest Himalayan doe had kindled on Friday the 6th inst. upon the bare straw without any nest whatever. I may mention she is very young, and this is her first litter. Will Mr. Millington, as the manager of the Rabbit department at York, be kind enough to explain how this has happened if the Rabbits were put in separate pens? They were sent in separate compartments in the boxes. I should be glad to hear if any of the

other exhibitors of the fancy kinds have experienced the same.—James Boyle, jun., *Blackburn.*

THIRSK CANARY AND FOREIGN BIRD SHOW.

Thirsk does everything properly; so it advertised, and its Show was a great success. It was unfortunate that there were, I think, no less than four shows fixed for the last week in the old year. It was a mistake; but, once committed to the responsibilities of a show, it is difficult to withdraw. Three out of the four I knew something of, and wrote to the secretaries, advising them of the possibility of a collision, and suggesting means to make each subservient to the other, and the whole a success. Darlington, the first in the week, collapsed, which I am sorry for, as under careful management it should have pulled through. Of Stokesley, the last show of the week, I do not know the result, not having seen any return, but I trust the exertions of its committee were not in vain. There are, however, wheels within wheels, and motive powers in the machinery of a show, which do not always appear on the surface, and with reference to this, committees will find that independent action will tell best in the long run; and any town which can hold its show only by consent of its neighbour, bases its claims to public support on a sandy foundation, and should carefully study the fable of "the old man and his ass."

I found Thirsk in the same place, and the yellow 'bus with the pair of greys seemed as though it had been waiting in the snow since last Christmas to carry us (for my wife and the black bag went to see the Show) to the door of the "Black Lion," where the worthy host and hostess gave us a right hearty Christmas welcome, doing all that genial hospitality could do to remind us that Christmas comes only once a-year.

As soon as I was thawed I went to the Show-room, to wish Mr. Bailey the compliments of the season, and we sat chatting "Canary lore" over the fire till the small hours of the morning, when I left him trying to find out the softest board in the floor for a bed, as no persuasion could induce him to desert his post as night watchman over the fires. The result of his careful attention was apparent when I entered the room to judge. Among three hundred entries there was not a bird to be found suffering from the inclement weather, and it is only giving Mr. Bailey his due to say that a more careful, conscientious custodian of birds it has never been my pleasure to meet.

Of the Canaries I shall only say that they included the best specimens of the year. The Mules formed an excellent collection, Mr. Ashton taking the principal honours in Jonque and Mealy Goldfinch; and Mr. Stansfield running first in the "Any other Variety" with his splendid Bullfinch and Goldfinch. The *rara avis* of this class was Mr. Ashton's Bullfinch and Linnet Mule. As a hybrid it is unique, but is not just now in good show condition. Mr. Robinson's Brown Linnet Mule in the same class I noticed in my notes on Darlington. It has improved greatly.

A most prominent feature in the Show was the splendid exhibition of Foreign Birds, of which there was a large entry; Mr. W. Bailey, of Purfleet, Essex, making a great show, and carrying off the greater part of the prizes. Both the Secretary and his brother are great admirers of the more gorgeous birds of warmer climes, and Mr. W. Bailey's name will be familiar to all visitors to the Crystal Palace Annual Show, where he has always been a successful exhibitor. I think that at no distant date the readers of our Journal may expect to see a series of articles from his pen on the different varieties of foreign birds, with hints on their management. Such papers will be read with interest, and will lead to an extension of our prize schedules in this direction. —W. A. Blakston.

P.S.—I have said nothing about somebody subsiding gracefully into the snow. I promised I would not, and I have kept my word.

Belgian.—*Yellow, Clear or Ticked.*—1, J. M. Harrison, Belper. 2, Stevens and Burton, Middlesbrough. 3, Withheld. *Buff, Clear or Ticked.*—1 and 2, J. Close, Derby. 3, J. M. Harrison.

Norwich.—*Jonque.*—1 and 2, Moore & Wynne, Northampton. 3, R. Hawman, Middlesbrough. *hc*, W. Bailey, Essex. *Buff.*—1 and 2, Moore & Wynne. 3, R. Hawman. *Evenly-marked Jonque.*—1, R. Hawman. 2 and *vhc*, Moore and Wynne. 3, E. Mills, Sunderland. *c*, H. N. Frosbrook, Doncaster. *Evenly-marked Buff.*—1 and 2, Moore & Wynne. 3, E. Mills. *hc*, W. & C. Burniston, Middlesbrough. *c*, H. N. Frosbrook; J. Calvert, York.

Cinnamon.—*Jonque.*—1 and 2, S. Tomes, Northampton. 3, Wells & Clarke, Hatfield, Doncaster. *c*, E. Stansfield, Bradford; Moore & Wynne. *Buff.*—1 and 3, Moore & Wynne. 2, S. Tomes. *hc*, R. Hawman; Moore & Wynne.

Yorkshire.—1, R. Hawman 2, E. Mills 3, A. Webster, Kirkstall. *vhc*, Stevens and Burton; E. Stainsfield; J. Taylor, Middlesbrough. *hc*, G. Horner, Thirsk; H. & W. Winter, Guisborough.

Lizard.—*Golden-spangled.*—1, Stevens & Burton. 2, J. Taylor. 3, R. Hawman. *hc*, E. Mills; H. Ashton, Prestwich; J. M. Harrison; Stevens & Burton. *Silver-spangled.*—1, H. Ashton. 2 and *hc*, Stevens & Burton. 3, J. M. Harrison. *c*, R. Hawman.

Crested (Any breed).—1 and 2, Moore & Wynne. 3, H. N. Frosbrook. *vhc*, R. Hawman. *hc*, T. Irons; W. Bailey.

Goldfinch Mule.—*Clear or Marked Yellow.*—1 and 2, H. Ashton. 3, W. Bailey. *Clear or Marked Buff.*—1, H. Ashton. 2, W. & C. Burniston. 3, H. and W. Winter.

Mule (Any other variety).—1, E. Stainsfield. 2 and *vhc*, H. Ashton. 3, C. Robinson, Gainsford.

Green Canary.—1, Stevens & Burton. 2, Moore & Wynne.

Goldfinch.—1, J. M. Harrison. 2, J. Calvert.

Linnet (Brown).—1, T. Bailey. 2, J. M. Harrison.

Bullfinch.—2, J. Calvert.

British Song Bird (Any other variety).—1, A. Webster. 2, T. Bailey.

Love Birds.—1, W. Bailey. 2, T. Bailey.

Parakeets.—*Australian.*—1, W. Bailey. 2, J. Calvert. *Any other Variety.*—1, W. Bailey. 2, J. Nicholson.

Cockatoos or Macaws (Any variety).—1, W. Bailey.

Parrot.—*Grey.*—1, W. Bailey. 2, A. Milner, Thirsk. *Any other Variety.*—1, W. Bailey. *Any other Variety.*—1, T. Bailey. 2, W. Bailey.

Best Collection of Foreign or British Birds.—1, W. Bailey. 2, T. Bailey.

Judge.—Mr. W. A. Blakston, Sanderland.

THE SCOTTISH COLUMBARIAN ASSOCIATION, EDINBURGH.

The Society.—Although the Society has been established but a few months its *debut* may at once be recorded as a success, continuing and in some respects even rivalling, the oft-repeated successes of the Glasgow fanciers. At the outset its prospectus recalls the advanced and still advancing estimation in which Pigeon culture is now held. The many artistic phases of this pursuit and the curious naturalistic phenomena it discloses have long been recognised in the middle-class world; but the charmed circle of fanciers is ever widening, and "right honourables" may now be found therein aspiring to columbarian distinction—a sign of the times again attested in the acceptance by the Earls of Haddington and Rosslyn of the Honorary Presidency of the new Society In association with these gentlemen follow Messrs. Huie and Ure as President and Vice-President; two of our most ardent fanciers, and who, by great personal exertion, have forwarded the new undertaking, assisted by Mr. Robert Blair as Treasurer, and specially aided by the unremitting and good-humoured labours of Mr. Joseph Luis, the Society's Honorary Secretary. The members—principally residents of Edinburgh—must not be left out of account, for to them is due the merit of enabling the Association to appear in public furnished with superior plant, and with a sufficiency of entries to secure the treasury from embarrassment.

The Show, announced as the first annual exhibition of the Association, was held in the Music Hall, George Street, a room of commanding proportions, elaborately decorated, thoroughly lighted, in every sense commodious, and above all well-affected by the Edinburgh public. The choice of head-quarters so suitable harmonises with the refinement which should always influence our exhibition arrangements. A liberal policy marked the classification; the provision for young birds being too lavish, however, as an arrangement for repetition, although perhaps well advised for the special occasion. 465 entries were brought out by the schedule, comprising in all some 620 birds; and the arrangement of these in double rows, the contrast of the varied plumage with the white drapery, the shapely form of the cages, the liveliness of their occupants, the moving groups of visitors, and the hall itself—all contributed to a most pleasing *ensemble*. Viewed from the orchestra or gallery, whence a comprehensive survey of the whole scene could be taken, the effect was particularly striking, especially eliciting the admiration of those who were making their first acquaintance with a Pigeon exhibition, and even the oldest fanciers confessed that such a combination had rarely before been presented to their notice.

Without Pouters a show in Scotland would scarcely be acknowledged, Pouters, therefore, as ever, occupied by far the larger half of the pens. The very recent criticism of this variety in all its divisions leaves but little of general advancement to chronicle. With but trifling modification the remarks of a twelvemonth ago apply now; and, indeed, within the compass of a single season but a step or two only can be gained. It will, therefore, be almost sufficient to report clear evidences of progress as displayed—first, by the presence of a more than average number of specimens conspicuous for structural refinement; and next, by the eagerness of most exhibitors to possess themselves of crosses from stocks of sound pedigree. In Blacks the Vice-President carried many honours, showing no less than one-third of the number exhibited. So pronounced an effort on the part of an experienced fancier, together with the general usefulness of the birds possessed by other competitors, should be the "foreshadow of coming events."

Proverbial philosophy completely breaks down before the continued plumage-debasement of the Reds. "When things come to the worst they are sure to stand still," appears to be for them the reading of the old adage. But whether or no they are at their worst, or standing still, or are mending, matters but little. To the fancier of taste and skill they present an opportunity in the art of colour-enrichment which assuredly will not be lost, the more so as a basis of structure and carriage sufficiently sound remains.

The Blue classes were distinguished not only by numerical strength, but also by excellence. Birds of mark and character appeared at every turn; and, for the encouragement of English breeders, it may be stated that the class for young Blue cocks was headed by the London-bred bird which the week before had won the Crystal Palace cup for the best cock bred in 1870.

As White Pouters display no special structural advantages over their coloured kindred, purity of plumage is their essential distinctive title to consideration. This essential is being disregarded, even at Edinburgh, where better things might have been expected. Although many shapely birds enriched the White division, it must be insisted upon that an Adonis-like form is no apology for dirt, but rather intensifies the disfigurement. The bird's demeanour even favours the bad impression, and, any way, he is the worse of a town life.

Of other salient points in the Pouter classes much in praise might be said did space permit, but it will be enough to add that a determined spirit of progress is manifest amongst the Scotch fanciers. It is felt that the combination of superior form with refined colour and marking presents an unlimited field for tasteful exertion, and it

desired more and more to stimulate highly selective matching. Another communication will deal with the remaining features of this exhibition.—W. Volckman.

[Want of space has obliged us to omit some paragraphs.—Eds.]

POULTRY CONDIMENTS OR TONICS.

Mr. Mills, an apothecary in France, recommends from experience the following as an unfailing tonic or stimulant for debilitated fowls, and especially for young Turkeys during the critical stage, when he says its effects are most marked and salutary. The prescription is copied from the French *Journal d'Agriculture Pratique*.—Take

Cassia bark in fine powder, three parts	Gentian, one part
Ginger, ten parts	Anise seed, one part
	Carbonate of iron, five parts.

Mix thoroughly by sifting. A teaspoonful of the powder should be mingled with the dough for twenty Turkeys, each morning and evening. It is of the greatest importance to begin the treatment a fortnight before the appearance of the red, and to continue it two or three weeks after.

Export of Fowls to America.—By a letter just received from Mr. Simpson, treasurer of the New York State Poultry Society, in answer to some inquiries I made a month since, I am informed that on and after January 1st all poultry and other breeding stock were to be admitted into the United States duty free. Previously there was a duty of 20 per cent. *ad valorem*, which was an immense tax on really valuable fowls, and, though it was often evaded by a fee to the officer, was a great hindrance to importing good stock. The relaxation is owing entirely to the exertions of the Society, and will be good news to fanciers on both sides of the water.—L. Wright.

Coal Tar for Bee House.—In answer to your correspondent, "A Northumberland Bee-keeper," I have a wooden bee house. I covered it with asphalted felt about eight years ago, and I have tarred it once since, but I have never found the tar in any way affect the bees; in fact, I had the best two virgin hives of honey that I ever had out of the tar-roofed house the same year. Mine is but a small house, and only tarred on the roof, and possibly the tar might affect the bees more if the house were large and tarred all over.—T. E., *North Wales*.

OUR LETTER BOX.

Books (*A Recent Subscriber*).—There is no book on Spanish fowls only. "The Poultry Book for the Many" gives all needful details, and can be had free by post from our office if you enclose 6½*d*. in postage stamps, with your address.

Supply of Eggs—Houdan Moulting (*R. W.*).—You are the one out of the thousand. In country villages eggs made 2*d*. each during Christmas week, and it has been difficult in London to get eggs fit for the breakfast table at less than 3*d*. each. Send us your notes. Your Hamburgh cock is not moulting in a healthy manner, and the hens with him have been eating his tail. He must be removed, or they will spoil him by continuing their cannibal propensities. It is rather an indication that your birds are too highly fed. We shall be very glad to have your poultry experience. We consider it among the most useful and interesting information we can convey.

Brahma Pullet's Crop (*A Duffer*).—It may be your pullet has a broken crop, and it therefore hangs loose in front. If it is so, shut her up, let her feed sparingly, and drink but little at two separate times every day. She must have no water by her. If she have she will continue drinking in hopes of relief from her discomfort, and the malady will get worse. If she be compelled to abstain from water the crop will likely contract. You must feel carefully whether there is anything that almost closes the passage from the crop to the gizzard. We have known such a thing, and once took out a carrot 3 inches in length.

Game Bantams (*S. G.*).—If there is no special clause to allow it, the undubbed bird will be disqualified if shown against dubbed ones. The operation may be performed any time except during a frost. We do not advise you to pull out the flight feathers of the cock. If detected it will lead to a painful disqualification, and such things may be practised but they are not allowed. You may exhibit the Duckwing pullet with a good prospect of success if you put her with a good cock. We know no work devoted to Game fowls.

Egg Supply (*A. M.*).—Yours is a deserved success. You hatched your chickens at the right time for laying. It is as natural for a Hamburgh pullet hatched in April to lay in December as for a man to cease growing at twenty-five. They have lived and laid in spite of the sawdust, and not because of it.

Feathered-legged Bantams (*An Admirer of the Bantam's Form*).—The Bantams you speak of were formerly called Booted Bantams. They are principally excluded from the shows because none are shown. They do not lack admirers.

Fowls in Confined Space (*J. D.*).—You may keep a cock and four, six, or eight hens in the space 20 feet by 9, and a fowl house. The number will depend on your management and supply. We hardly need tell you such a limited space does not provide the many things that are essential to a fowl's well-doing. Road grit, growing grass, fresh mould, bricklayers' rubbish, lettuce or other green food must all be supplied according to the number of fowls kept. The best birds will be Crève-Cœur, Spanish, or Brahma, for egg-producing.

Cock Purple-combed and Moping (*Young Beginner*).—Separate the cock from the hens till his comb is thoroughly healed. They will eat it as long as there is any wound or sore. Purge the cock thoroughly with castor oil, then give Baily's and camphor pills.

Umbrellas and Sticks at Poultry Shows.—"J. H." informs us that the Committee of the Barrow-in-Furness Show have adopted his suggestion, that all sticks and umbrellas are to be left at the door.

Houdans and Crève-Cœurs (*Reader*).—A full description with illustrations was published in Nos. 62 and 63 New Series of this Journal, and republished in a collective form in our "Poultry-keepers' Manual."

Antwerps at Manchester (*W. Justice*).—You have adopted the right course. We cannot insert any relative statement until both sides have been heard.

Ground Bones for Chickens (*A Constant Subscriber*).—The smaller the pieces the better. We prefer the powder, but the sample, the fragments the size of pins' heads, will do. Green bones are quite as useful for the purpose as dry bones.

Thirsk Show (*A. J. W.*).—Mistakes will occur, and you will see in our report that Mr. Bailey did not shrink from his labours.

East Kent Poultry Show.—Mr. G. Raynor informs us that the third prize for Game chickens was awarded to him, and not to Mr. T. G. Ledger.

Sick Dragoon (*A Weekly Reader*).—Your bird has roup; we gave the most probable cures for this complaint in our number for November 17th, to which we refer you.

Points in Black Carrier (*T. A. Dean*).—Skull long, straight, narrow between the eyes, and flat at the top. Beak long, straight, thick; length of skull and beak 2¾ inches. Eye red; wattle of the eye round and regular—*i.e.*, of equal width. Beak-wattle tilting forward and standing well up. The plumage should be dense and close, so that the bird may have a solid look. The carriage should combine grace and strength. Shoulders broad, chest full, limbs long, head well up, so that the eye is directly over the toes, neck long and thin, back rather hollow.

Ligurian Bees (*H. Jenner*).—You may obtain a Ligurian queen either direct from Mr. Woodbury, or from those who advertise them in our columns, but you are not likely to get one until May or possibly June The price varies with the season. The best mode of uniting queens is fully described in our number published on the 5th August, 1869. You will find a smouldering roll of linen rags of not less than an inch in diameter, and lighted at one end, the smoke of which may be directed by the breath as required, the most efficient means of controlling and subduing your vicious bees.

COVENT GARDEN MARKET.—January 11.

We have no alteration worth quoting this week, and our supplies are sufficient for the meagre attendance of buyers we have now.

FRUIT.

	s.	d.		s.	d.		s.	d.		s.	d.
Apples	½ sieve	1	0 to	2	0	Mulberries	lb.	0	0 to	0	0
Apricots	doz.	0	0	0	0	Nectarines	doz.	0	0	0	0
Cherries	lb.	0	0	0	0	Oranges	℔ 100	6	0	10	0
Chestnuts	bushel	10	0	18	0	Peaches	doz.	0	0	0	0
Currants	½ sieve	0	0	0	0	Pears, kitchen	doz.	1	0	2	0
Black	do.	0	0	0	0	dessert	doz.	1	0	3	0
Figs	doz.	0	0	0	0	Pine Apples	lb.	3	0	5	0
Filberts	lb.	0	0	2	0	Plums	½ sieve	1	6	3	0
Cobs	lb.	2	0	2	6	Quinces	doz.	0	0	0	0
Gooseberries	quart	0	0	0	0	Raspberries	lb.	0	0	0	0
Grapes, Hothouse	lb.	4	0	8	0	Strawberries	lb.	0	0	0	0
Lemons	℔ 100	6	0	10	0	Walnuts	bushel	10	0	16	0
Melons	each	1	0	4	0	do.	℔ 100	1	0	2	0

VEGETABLES.

	s.	d.		s.	d.		s.	d.		s.	d.
Artichokes	doz.	0	0 to	0	0	Leeks	bunch	0	4 to	0	0
Asparagus	℔ 100	7	0	10	0	Lettuce	doz.	1	0	2	0
Beans, Kidney	℔ 100	2	0	3	0	Mushrooms	pottle	1	0	2	6
Broad	bushel	0	0	0	0	Mustard & Cress	punnet	0	2	0	0
Beet, Red	doz.	2	0	3	0	Onions	bushel	3	0	5	0
Broccoli	bundle	0	9	1	6	pickling	quart	0	4	0	0
Brussels Sprouts	½ sieve	2	0	3	0	Parsley	sieve	3	0	6	0
Cabbage	doz.	1	0	2	0	Parsnips	doz.	0	9	1	0
Capsicums	℔ 100	0	0	0	0	Peas	quart	0	0	0	0
Carrots	bunch	0	4	0	8	Potatoes	bushel	2	0	4	0
Cauliflower	doz.	2	0	6	0	Kidney	do.	3	0	4	0
Celery	bundle	1	6	2	0	Radishes	doz. bunches	0	6	1	0
Coleworts	doz. bunches	3	0	6	0	Rhubarb	bundle	0	0	0	0
Cucumbers	each	1	6	3	0	Savoys	doz.	1	6	2	0
pickling	doz.	0	0	0	0	Sea-kale	basket	2	0	2	0
Endive	doz.	2	0	0	0	Shallots	lb.	0	6	0	6
Fennel	bunch	0	3	0	0	Spinach	bushel	2	0	2	6
Garlic	lb.	0	8	0	0	Tomatoes	doz.	3	0	0	0
Herbs	bunch	0	3	0	0	Turnips	bunch	0	6	0	0
Horseradish	bundle	3	0	6	0	Vegetable Marrows	doz.	0	0	0	0

POULTRY MARKET.—January 11.

We are still but scantily supplied; neither buyers nor sellers seem to have wakened since Christmas. There are but few fresh goods, and that which has been kept from last year is showing the change of weather.

	s.	d.		s.	d.		s.	d.		s.	d.
Large Fowls	3	0	to	3	6	Pigeons		0	9	to	0	10
Smaller ditto	2	0		2	6	Rabbits		1	4		1	5
Chickens	1	9		2	0	Wild ditto		0	9		0	10
Ducks	2	0		2	6	Hares		2	6		3	0
Geese	7	0		8	0	Partridges		1	6		1	9
Pheasants	2	0		2	6	Grouse		0	0		0	0

WEEKLY CALENDAR.

Day of Month	Day of Week.	JANUARY 19—25, 1871.	Average Temperature near London. Day.	Night.	Mean.	Rain in 48 years. Days.	Sun Rises. m. h.	Sun Sets. m. h.	Moon Rises. m. h.	Moon Sets. m. h.	Moon's Age. Days.	Clock before Sun. m. s.	Day of Year.
19	Th	Twilight ends 6.25 P.M.	43.1	30.6	36.9	20	57 af 7	24 af 4	43 af 6	37 af 2	28	10 56	19
20	F		42.4	30.6	36.5	15	56 7	26 4	43 7	43 3	29	11 15	20
21	S		42.9	32.0	37.5	20	55 7	28 4	33 8	58 4	0	11 32	21
22	Sun	3 Sunday after Epiphany.	43.1	32 3	37.7	18	54 7	30 4	8 9	14 6	1	11 49	22
23	M		42.6	32.4	37.5	18	53 7	32 4	34 9	32 7	2	12 4	23
24	Tu		43.1	32.1	37.6	19	52 7	33 4	58 9	45 8	3	12 19	24
25	W	Day breaks 5.52 A.M.	43.4	32.3	37.9	21	51 7	34 4	18 10	57 9	4	12 34	25

From observations taken near London during forty-three years, the average day temperature of the week is 42.9°, and its night temperature 31.3°. The greatest heat was 68°, on the 19th, 1828; and the lowest cold 4½° below zero, on the 19th, 1838. The greatest fall of rain was 0.90 inch.

WINTER-FLOWERING BEGONIAS.

FLOWERS are at all seasons valuable—never more so than at midwinter, and of plants blooming at that time Begonias are in my opinion amongst the most useful, whether as plants in the stove or as furnishing cut flowers for vases, epergnes, &c., for dinner-tables, for the elevated parts of which it is desirable to have suspended or drooping over the margin flowers which have a similar disposition on the plant. Fuchsias, than which nothing can be more beautiful in summer, are of this description, and so are the brilliant scarlet Begonia fuchsioides and the bright pink B. erecta multiflora in winter.

Begonias are of very easy culture, no roasting heat nor vapour-bath atmosphere is needed for their successful treatment. A kind of house which is neither a stove nor a greenhouse, in other words an intermediate house, suits them. From March to September they will thrive in a vinery as well as anywhere; the moisture and increasing temperature, with the free air-giving, induce a free but sturdy growth, and the subsequent dryness needed for the ripening of the Grapes also secures the ripening of the wood of the Begonias, and gives a wholesome check to the plants; for, when placed in the stove, they are again excited into growth by the moisture, and their tendency is to flower at once. I must now enter more into details, and shall commence with February.

In February the plants which are more than a year old will be out of flower, or nearly so, though some are truly perpetual-flowering; very unlike Perpetual Roses, which oftener bloom once than twice, to say nothing of being half the year dreary-looking objects. The old plants of Begonias will in February be past their best, and we shall keep them rather dry, but not so as to cause them to go quite off. From the base of the previous year's growth will come some strong shoots, which should be kept growing; therefore give a little water, but not much, from the time the plants begin to cease flowering, and early in March they will be at their worst. Never mind this, but turn them out of the pots, and, removing all the old soil that can be done without destroying every particle of root, pot them in a size of pot—clean both inside and outside—that will hold them comfortably. Good drainage must be given them, and to keep it efficient cover it lightly with moss, or better, with the rough parts of the compost. The compost may consist of the turf of a common where the soil is half loam half peat, and full of sand—a kind of soil in which Foxgloves and nearly all Ferns flourish, more so than in so-called peat, which is very often nothing but a soapy bog soil. If this cannot be had, then one part light turfy loam, the more turfy the better, chopped up small, one part sandy peat, and one part old dry cow dung, or failing that, leaf soil, with a sixth part, or half as much as the others, of silver sand, and the like of charcoal in pieces from the size of peas to that of walnuts; or boiled half-inch bones form a good substitute. Mix all together, and the whole will be a nice open compost, and with this pot the plants rather firmly, but not very tightly. Place them in the vinery if you have one started in February, and the sprinklings of water and the moist atmosphere will be most agreeable. Water carefully and sparingly until the plants begin to grow freely, and their doing so will be an indication of their having taken to the fresh soil. The moisture needed for the Vines will be all they require, and as to water none will be wanted as long as the soil remains moist, but when it is becoming dry give a supply of water sufficient to show itself at the drainage. At the same time the plants must not be allowed to suffer from want of water. It is the watering regularly, and when the soil is moist enough for every requirement, that renders plants so sickly in the hands of amateurs as a rule, and of gardeners also at times.

By June the pots will be full of roots, and the plants growing freely. Shift them into pots a size larger, and use the same compost as before, with good drainage. Do not give a large shift, for the one-shift system is not suited to Begonias, nor, indeed, to more than 1 per cent. of all the plants in cultivation. If the plants do well they will have made good growth by the end of July, and will then need a drier atmosphere, but being in a vinery they will have that on account of the ripening of the Grapes; yet if they are growing (and B. fuchsioides may be so, while B. Dregei may be flowering), remove them if you can to a later vinery. Shift again into larger pots at the end of July or the beginning of August, and they will continue growing up to September. Then, or at whatever time the plants have made a good growth, and seem to have ceased growing, give them plenty of room, which they ought to have at all times, and supply no more water than enough to keep the foliage fresh. Subject them to a month of this ripening process, and then remove them to a stove where there is a temperature of 50° to 55° at night, and 60° to 65° by day—they will bloom from September to February.

The only pruning the plants require is to cut out any worn-out shoots, but none that remain healthy. When, however, they become weak, and there are plenty of fresh and vigorous shoots from the base, remove them close to the surface of the soil. No training is needed, except it be putting in a neat stake the height of the plant, and tying the main shoots loosely to it, but it is only the straggling growths that need this. Stopping and other pruning Begonias will not endure, as by it we remove the blooming parts, and cause fresh shoots to push up from the root.

Failing a vinery, or if it be inconvenient to grow the plants there, they may remain in the stove through the summer, but from May to the middle of September they would do much better in a greenhouse than in a hot moist stove. Slight shade from bright sun in the hottest season of the year is necessary, whilst from August to April they cannot have too much light.

Besides old or large plants I grow a number of smaller ones. Early in June I take cuttings of the strongest parts, such as are rather firm, or not very gross, and 3 or 4 inches long. Cutting transversely below a joint, and removing the leaves halfway up, I insert the cuttings singly in 3-inch

pots. I fill the pots with soil, make a hole in the centre, then drop in a little silver sand, and, introducing the cutting, place silver sand round it or fill the hole level. I next water gently, and place the cuttings in a hotbed, shading from bright sun until they are rooted, which they will be by July. Care must be taken not to overwater, or the cuttings will damp off, and yet it is necessary to keep them moist. When rooted remove them to a vinery or other house where they will have slight shade from powerful sun, and a moist atmosphere, in which they will grow freely if properly watered.

When the pots become full of roots shift the plants into 4½-inch pots, which may be needed by the beginning of August or earlier, and at the end of September remove them to the stove or intermediate house. It is well to keep the plants rather dry and in a position fully exposed to the light up to the middle of December, when they will be showing flower, and I then shift them into 6-inch pots, put a neat stick to such as require it, and water carefully for a time—I mean sparingly, just keeping the soil moist, for if much water is given at this stage they fall back, and the flowers, and very often the leaves, drop; if this do not take place they flower about the middle of January, and go on to April, or longer. Being then rested until June by withholding water, and again started into growth, they make highly ornamental plants by October, and may either be allowed to bloom or be rested for a time in order to succeed the old plants. The latter and the cuttings will afford a good handful of flowers—some drooping, others erect, but all graceful, and of the brightest scarlet or pink—if not every day, very often from September to April, also for house-decoration plants that stand the dry atmosphere well, and if they are destroyed, as is not unfrequently the case with room plants, they are easily replaced. I would advise everyone to grow this class of plants in quantity. They are with me every-day plants, one or other being in bloom all the year round.

The kinds I grow for winter-flowering are—

B. fuchsioides.—Flowers scarlet, of graceful habit. The flowers hang down and are of the most lovely waxy coral red. The plant attains a height of 6 feet, and is feathered to the pot. It is the very best of all, being very ornamental in habit as well as flowers.

B. erecta multiflora.—Flowers pink, erect habit, but as graceful as B. fuchsioides, and it grows quite as tall. It is very free-flowering, the flowers drooping, and some say fragrant.

B. Ingrami.—Flowers deep rose, in large clusters, slightly drooping. Not so tall as the two preceding, erect habit and stiff.

B. prestoniensis superba.—Flowers orange scarlet. Plant very free-flowering; habit dwarf and compact. It is also a good summer-flowering kind. For winter it should not be started until June, as it is semi-herbaceous, no doubt owing to its parent, B. cinnabarina, though somewhat shrubby, owing probably to the blood of B. nitida.

B. insignis.—Flowers pink. Very free-flowering and good.

B. hybrida floribunda.—Flowers rose. Habit of B. fuchsioides, very elegant, and very free-blooming.

B. Dregei.—Flowers white. Plant of erect dense habit, very free-blooming and continues long in flower. In begins flowering in July or August, and produces a succession of blossom until spring. The flowers are very pretty, though not so conspicuous as those of many sorts. It forms a dense bush from 2 to 4 or 5 feet high. It will succeed in a greenhouse or vinery, and is then semi-herbaceous.

B. nitida.—Flowers blush, in large clusters. It is of straggling growth, and does well on a trellis, and trained to a stake in a pot.

The above are all good, and though I have grown many others I consider them the best. Of course, I shall be glad to receive information respecting any others that your correspondents may grow. I also would not be without B. manicata, flowers pink. It produces such clusters of delicate wax-like spray as to be quite charming. It succeeds very well in a vinery, flowering with the return of spring, and with me in a stove in February. Also that very thick leathery-leaved sort, B. hydrocotylifolia, which has bright pink flowers borne neatly above the foliage. A pretty plant for rooms, and for rockwork too hot and dry for Ferns. It flowers in January or February. —G. Abbey.

FLOWER GARDEN ARRANGEMENTS.

Never was there a time when so much attention was devoted to the cultivation of taste and skill in the arrangement of colours. The modern style of flower gardening has, so to speak, forced this upon the gardening portion of the community. The bygone-system of mixed beds and borders made no great demand upon one's skill in this respect, but since the fashion of massing large breadths of strong colours has prevailed, more attention has perforce been given to the effect which the various colours have upon each other. Occasionally flower gardens may be seen in which the arrangement of the colours is so good as to leave nothing to be wished for, but this is the exception rather than the rule. Glare and glitter are still in force, and that too in many public gardens, the arrangements of which are studied and followed in hundreds of private places, because it is supposed that the flowers in notable public gardens are certain to be arranged by persons possessing great artistic skill and refined taste; but, unfortunately, this is very far from being generally the case. In most instances no exception can be taken to the colouring in regard to its being correct, yet there is such a constant succession of primary colours that a gorgeous dazzling effect approaching vulgarity is the result. It is the want of refinement of which I complain—that quiet grace which tones down and affects an entire design in such a manner as to impart an indiscribable charm to it.

Scarlet, yellow, and blue are the dominant colours, and wonderfully striking effects may be wrought out with them; but it is to the various shades of pink, crimson, purple, and grey that the true artist turns for materials, which, when skilfully interwoven with those other bright colours, impart the highest possible finish to any design, be it large or small. How very rarely it is that justice is done to the beautiful colours of the fine-foliaged Pelargoniums; even our old favourite Mrs. Pollock is oftener seen with the flower trusses left on than not, and thus the work of the cross-breeder, whose aim was evidently to produce beautiful foliage, is altogether forgotten or ignored. The Golden Tricolors and many of the white-variegated Pelargoniums form most effective masses or ribbon lines with their foliage alone, serving admirably to divide other kinds whose chief beauty is in their flowers; so that those persons who disregard this most valuable property, and suffer all kinds and classes to flower indiscriminately, can hardly be aware of what they lose by overlooking the rich and varied beauty of the leaf tints, the introduction of which can in nowise affect the utility of those kinds grown for the beauty of their flowers.

To illustrate my meaning I will take a very common and very beautiful ribbon border of four rows—the first of Cerastium, pearly grey; the second of Lobelia Trentham Blue, deep blue; the third of Pelargonium Crystal Palace Gem, rich yellow; and the fourth Coleus Verschaffelti, deep rich crimson. Here are three out of the four kinds of plants used imparting the colour required by their foliage alone; therefore if Crystal Palace Gem is suffered to bloom, its flowers would quite spoil the effect. Or, supposing we want an arrangement which shall be so quiet in tone as to neutralise, or rather subdue, the effect of bold masses of colour on each side of it, we will take that beautiful silver-variegated Pelargonium Miss Kingsbury for our centre, surrounding it with a broad band of Purple King Verbena, and with an equally broad band or border of Manglesii Pelargonium; the flowers being kept picked off both Manglesii and Miss Kingsbury, such a bed in such a position is most telling. Then, again, how charming is the effect of a compact mass of the silver-variegated foliage of Perfection when seen in all its purity next such a deep pink kind as Maid of Kent! but if, when so placed, Perfection is suffered to produce its bold scarlet flowers, an air of vulgarity prevails, and the chaste and refined beauty of its foliage is altogether lost.

Our object, then, in arranging the colours in a group of beds should be to produce an effect of purity and brightness, devoid of gaudiness on the one hand or insipidity on the other; for it should not be forgotten that it is an easy matter to use too much of such plants as Centaurea, or even of Cerastium, as well as of those possessing brighter colours.—Edward Luckhurst, *Old Lands, Buxted, Sussex.*

FITZROYA PATAGONICA.

Seeing that Mr. Record has failed after four years' trial, both in light and heavy soils, in procuring anything like a specimen of this Conifer, I will state a few particulars as to the tree now growing here. It has attained the height of 9 feet 6 inches, and is 4 feet 4 inches through. These dimensions show that the style of growth is entirely different from that of Mr. Record's plant. Where the tree is growing the soil is light and rubbly. No special care was taken in planting the tree, further than taking off the turf and making the hole large enough to contain the roots, which were spread out carefully, so that they might be equally extended on all sides; then the soil was filled in and trodden down carefully and firmly, so that the wind would have little chance of loosening it at the neck, an occurrence which is most injurious to any tree.

The tree has been planted several years. In 1869 it grew 9 inches in height, last year it made 10 inches, and 10 inches of young wood, pendulous; but the pendulous growth of the previous year has risen quite erect, and so has every growth that has been made of the year previous. The leaders, of which there are several, and the side branches, keep pace in their growth. I think it a valuable addition to the pinetum, and have not the slightest doubt that it will rise to the height of 70 or 80 feet.—James Smith, *Fynone, South Wales.*

RECENTLY-INTRODUCED GRAPES.

Having grown and fruited most of the new Grapes which have been introduced within the last three or four years, it may be useful to some of your readers if I state my experience with them. There can be no doubt that differences of climate, soil, and treatment, have a great influence on the Vine as well as on other fruits, so that the results of my treatment here may be different from that of others, and different from what I should have arrived at under other circumstances. The merits and demerits of new fruits are much commented upon in the horticultural press, and sometimes they are subjected to undeserved abuse. It is scarcely possible for a gardener to write with confidence about a new Grape the first year of its fruiting with him, although in certain cases a pretty correct estimate may be formed; but it is best to have two or three years' experience before speaking confidently. There is more difficulty in introducing new fruits to the public than there is in the case of new flowers, and it is well for gardeners that it is so. Take, for instance, a new Grape; if a vinery is to be planted, and the Grape in question is said to be better than any of the older varieties in the same class, the gardener is anxious to give it a trial, and it is very annoying, after considerable attention has been bestowed on the plant, and valuable space appropriated to it, to find that it is much inferior to older sorts that would not have cost a fourth of the money. There is not a tithe of the disappointment felt over a new flower if it is not found worthy; a flower can in most cases be proved a few months after purchase, and if it is not quite up to the high character received with it, there is little harm done, and it is not worth while to get out of temper about it; but when you have been wasting your time over, and devoting space to a Vine or fruit tree which after two or three years produces fruit neither fit to place upon your employer's table nor to give to your friends, truly there is some excuse if you are tempted to use a few hasty expressions. Of course, it equally behoves those to be cautious who have the assurance to laud a new variety of fruit to the skies before they have seen it growing and had sufficient opportunity to test its merits. Most of the recently-introduced Grapes, if they do not quite sustain the high character given with them, are worthy of cultivation for some peculiarity of flavour or constitution.

Mrs. Pince's Muscat is a good-keeping sort, superior to Lady Downe's in flavour, but not in appearance. The berries set quite as freely as with Lady Downe's, both growing in the same house. The bunches are long, tapering, but the berries do not colour well. It is grafted on Lady Downe's, and the difference in colour is easily perceived. It has done best here on its own roots.

Muscat Champion is the best flavoured of all the new Grapes; none of the other so-called Black Muscats have the flavour so fully developed as this. It is a shy bearer, requires heat, and colours badly. It does best grafted on the Black Hamburgh.

Royal Ascot has proved to be an excellent sort, and has improved in appearance and quality; as a black Grape, both for early and late houses, it is well worthy of cultivation. The bunches are large, sometimes shouldered; berries large, black, and covered with a dense bloom; the flesh is firm and richly-flavoured. I have it grafted on the Black Hamburgh, but the White Frontignan is the best stock for it. I was much surprised last season at the effect of this stock on the Black Hamburgh. A grower in this neighbourhood, who sends his fruit to Covent Garden, had some White Frontignans planted in the same house with the Black Hamburghs; as the fruit could not be disposed of to the best advantage, the Frontignans were grafted with Hamburghs, and the Grapes from the grafted Vines were superior in every respect, the berries being larger and more highly finished; the plants had also the same peculiarity as the stock—viz., that of being the first to be attacked by red spider.

Of white Grapes the recent introductions are not numerous. *Golden Champion* is a very distinct sort, both as regards flavour and appearance; it has succeeded best grafted on the Black Hamburgh. The berries are large, with a peculiar and rich flavour. I think it tender, and not likely to put up with the treatment to which the Black Hamburgh is often subjected; it has, however, been exhibited in such magnificent style that those who have not been successful should try again. I fruited it for the first time last year.

Madresfield Court Black I have not grown, but having seen and tasted it in the hands of others, it seems to be a very desirable variety. The flesh is not so firm as that of Mrs. Pince, and it is said not to keep well after Christmas. The bunches are large, and the berries large and quite black. It is again very highly recommended by Dr. Hogg in the "Gardeners' Year Book" for 1871.—J. Douglas.

TEA ROSE CULTURE.

The answer to your correspondent at page 438 had determined me to continue the subject of my special favourite, the Tea Rose, but the many calls on the clergy at this season of the year prevented me from doing so before, and now Mr. Kent has forestalled me in some of my remarks.

I am but a beginner, so offer you my notes in all humility, and I shall be most grateful to anyone who will set me right if I err.

I have about sixty varieties of Tea and Noisette Roses, and if I were asked to name my favourites they would be as follows:—Maréchal Niel, Céline Forestier, Souvenir d'un Ami, Rubens, Madame Falcot, Madame Margottin, Comte de Paris, Archimède, Niphetos, Madame Willermoz, Madame Bravy, Marquise de Foucault, Monsieur Piton, Madame Charles, Souvenir d'Elise, President, Sombreuil, and last, though not least, Gloire de Dijon. These have done all I could wish; they stood the past winter in the open ground, and bloomed profusely all the summer.

I describe my treatment below. La Boule d'Or will not do here without the protection of glass, it will never open; the same is my experience of Marie Sisley; under glass both are fine. Now, I would ask your readers to tell me about Monplaisir; I have been much disappointed with it. On hearing its character I bought four as fine plants as one could wish to see; I treated them to some of the best places I could find—against a sheltered wall, in an open border, and planted out against a conservatory wall. I did not obtain during the season one flower worth looking at. It was shy to bloom, and when a bloom came it was as ragged, ill-shaped a production as you could well find. Archimède is a great favourite of mine; it is always in bloom, and if thinned out, so as to leave one bud on a shoot, expands like a beautiful white Camellia.

I find that the strong growers of this class do best on a very short Briar. Maréchal Niel I have against a wall, under glass, and as a standard; it is never bad anywhere, and with the tying up, described below, is as good in the open as under glass, perhaps even better, as I find the blooms larger. I am very favourably inclined towards Unique; it is a good grower, and its peculiar flower is very pleasing. Many of the newer Roses, including Belle Lyonnaise and Madame Levet, which, for the information of Mr. Kent, is one of the new seedlings from Gloire de Dijon, I have not yet bloomed, though I have plants of them.

In my judgment many make the mistake of planting Tea Roses in situations where they get the full heat of the sun all day, which causes the flowers to expand so rapidly that they lose both shape and colour. My Tea border is under a wall facing due east, but protected from the north. The soil, being stiff clay, was deeply trenched, some of the subsoil burnt, and a good supply of manure and old leaves worked in. The plants are in rows, with occasional trenches between, which trenches in summer are filled with good, rich stable manure, well trodden by pigs, and from time to time water is pumped in by means of a hose. I am constantly among them with the aphis brush dipped in a concoction of 1 lb. quassia steeped in two gallons of boiling water, and half a pound of soft soap. I pinch out all superfluous buds. When I want Roses of extra size I tie a piece of tracing or tissue paper, dipped in oil and then dried, round the stem of the bud, leaving the paper to project about 1½ inch beyond it; this draws out the bud, and causes it to elongate and to swell gradually. The paper must be increased in size according to the growth of the bud. The oil throws off the wet, which would otherwise cause the paper to adhere to the bloom; it also causes ants to keep their distance. I had many a fine bud destroyed by these pests last

season; they eat their way into the very heart of the expanding bloom. Madame Falcot when treated in this way was as fine as Maréchal Niel.

All my Roses are now snug beneath a covering of about 3 inches of cocoa-nut refuse and long stable manure; they are so near the river that I dread frosts; last year I lost but three out of four hundred. Next year I mean to be daring enough to try my luck on the exhibition table.—Stiff Soil.

BEDDING CALCEOLARIAS IN 1870.

I do not think that the cause of Calceolarias dying-off so extensively as they have done for the last few years has ever been discovered, although numerous opinions have been expressed upon the subject, nearly every gardener having a different one. Some of the theories advanced appear reasonable, and those who had the energy and opportunity have set themselves to prove their truth, and I believe with good results. Although the past summer has been an exceptionally dry one, quite unfavourable to the Calceolaria, especially with so much sunny weather, I think in many places this favourite bedding plant has never grown better; and in many other places, as far as I have seen, there has been less loss from disease, as it is called, than formerly. This, I conclude, is because the grower pays more attention to the cultivation of the plant, especially from the time of propagation till it is placed in the flower garden, and even in the latter department gardeners find it advantageous, when it can be done, to make special provision for their Calceolarias.

Some of the growers of the Calceolaria who were most successful during the past summer, tell me that they propagate as late as the middle of November, if the weather will allow, and make their cuttings as short as possible, most of them without a heel to them, the object being to delay the rooting until the New Year. They use a finely-sifted heavy rather than light soil, and when the cuttings are well rooted the centre shoot of each is nipped out; this checks their rapid growth into bulky plants until the days lengthen, and they can have more light and air to encourage a healthy growth. The young plants are kept as cool as possible both night and day, and in a short time every shoot each plant makes is again pinched.

While the plants are breaking into growth again, a suitable place is being prepared for them either in cold pits or frames, or in trenches in the open ground; if the latter, the trenches are made 4 feet wide, and a good spit of earth thrown out on each side makes them about 18 inches deep. The bottom is covered with any rough siftings of soil, and the remainder is made up of similar soil to that in which the plants are to be grown in the flower garden. I might remark that if protection can be found the trenches are to be preferred on account of the want of every foot of space under glass at that time of the year, and the trenches afford the plants a similar position to that which they are to occupy in the flower garden.

The transference of the plants from the cutting-frame to the trenches is effected in the most careful manner. With a view to facilitate this the cuttings at propagating time are placed as far apart as circumstances will allow, in order that the plants may be taken out without root-breakage, and the same care is taken when planting in the trenches. There is another advantage in using trenches—namely, a convenient space can be allowed to the plants. At all times they are exposed to the sun and air when the weather is not frosty. I am told that to plant out early is a great point in their favour, for if left until ordinary bedding stock goes out, which, perhaps, is as late as June, the Calceolaria is to a great extent exhausted, and the roots become so entangled, and the process of moving at that time so difficult and dangerous, that the plants scarcely recover until the summer is nearly gone. I think this is a reasonable excuse for early planting; and again, we all know that if the plants are too large the shock of moving causes the wood to ripen-off, and then there is a great chance of the first flowering carrying them off entirely, and those which do not die fail to produce blooming wood until too late.

In the flower garden the wants of the Calceolaria must not be neglected, and as the plants like a cool moist bottom, it has been found beneficial to place a moisture-retaining soil under them at about 1 foot deep, and quite 6 inches thick. If the soil above is light, make it heavier by suitable additions. A rather close soil I have always found to be more suitable, provided it is not too poor, but it should be made good to a considerable depth, as Calceolarias, like most bedding plants, root very deeply into the ground. I think trenching should be carried on as systematically in the flower garden as it is in the kitchen garden, because it would afford the plants a beneficial change of soil. Where the soil has been worked for a number of years for the same purpose, it would be better to take it out to a good depth and add fresh soil made up with a large proportion of good peaty loam. This experiment has answered perfectly well during the past summer with the Calceolaria; therefore it is to be recommended for other bedding plants, excepting those which would be liable to grow too coarse at the expense of bloom.

Watering and mulching during a long period of hot and dry weather are such essential points in the culture of the Calceolaria, that they ought to claim special attention, for then it is, and when there is an absence of dewy nights, that this plant appears to suffer most. The difficulty lies in keeping the plants growing and the wood from ripening-off under the burning sun, so as to insure a continuous blooming time; but during the past summer much of this difficulty has been overcome by attending to the above details. Although in what I have stated there is nothing new or more than what an anxious cultivator would think of, I am not afraid that this plan will be less successful with those who practise it than the rough-and-ready treatment which very many growers pursue with this the most useful, and one of the oldest and most popular bedding plants we have. After a dry summer, or if the month of September should be showery, it is surprising how suddenly the Calceolaria commences a healthy and luxuriant growth, which would, if the season could be prolonged, produce one of the most brilliant masses of bloom ever witnessed, and such as no artificial treatment could, perhaps, ensure. Still I think this disposition of the plant is a good guide to the cultivator as to the wants of the Calceolaria, and should be imitated as much as possible, for of all the hardier sorts of bedding plants it requires the most careful treatment.—T. Record.

RABBITS AND TREES.

Having from time to time seen communications on this subject in The Journal of Horticulture, especially from persons anxious to get up patches of evergreens in game coverts, I send you a few remarks, the result of several years' experience in planting.

If it is practicable entirely to exclude rabbits and hares from the parts planted, I would advise that the wire netting used be not less than 3 feet wide, and not of larger mesh than 1½ inch. It should be fixed to upright stakes, and be well pegged down. Three inches at the bottom should be turned outwards, and laid flat on the ground, which should be levelled, and made up over the bottom of the wire along the whole length. The rabbits, hurting their claws without result in the buried horizontal portion of the wire, soon give up scratching at it; but some one should occasionally go round and make up the ground to the wire where required.

I wish, however, to speak more particularly of planting single trees or shrubs in bare parts of coverts or plantations. It is provoking to have these devoured year after year, and I think it better to plant fifty with efficient protection, than five hundred to be barked and mutilated, to take their chance of surviving in a deformed and stunted condition. It is known that trees when first planted are especially liable to be attacked by rabbits. We observe loppings of trees in coverts entirely cleared of bark, whilst branches and twigs of the same size growing within reach are untouched. In the same way recently-planted trees are sure to be selected amongst others of the same kind and size. I have found the recommended preparations of night soil, gas tar, train oil, quicklime, &c., both bad for the tree and inefficient, unless renewed every month. I have used cradles made of common wire netting 2 feet wide, 2-inch mesh. This I cut or rather break across into lengths of about 2 feet. These I place round the young trees with the rough ends of the wire at the bottom and the top, and bring the level sides together, fastening them with soft wire previously cut into lengths of 3 or 4 inches. About 2 inches at the bottom and top of the cradle should be turned outwards, which gives additional protection. Each cradle should be pegged down with two pegs. The diameter of these cradles will be about 8 inches, the height about 18 inches, and the cost about 3*d*. This may seem a large cost to protect a tree worth only a penny, but much vexation is saved, and they require no renewal. The labour of fixing is inconsiderable. I can fix from twenty to thirty in an hour with ease. Such trees as Larch and Spruce, if 3 feet high, which I find the best size for planting from my

own nursery, into which I introduce them at 1 foot, will, of course, have their lower branches compressed by such cradles; but I do not find that this interferes with their growth. The same may be said of Hollies, and other evergreens. If larger cradles are desired, the netting may be obtained of any width, and the width must be three times the diameter required for the cradle. Rabbits are more likely to jump inside the larger cradles, which should, therefore, be higher. Much additional protection is obtained by putting pieces of Gorse or Thorns inside the cradle, and reaching over the top of it. I tried this year tying Gorse twigs with the bushy end resting on the ground about 2 feet up the tree. This appeared to answer until the late snow, when the rabbits ate first the Gorse, and then the tree. Thorns cut up into short pieces are a much better protection. A few handfuls of these placed round the tree to a width of a foot and a height of 18 inches, seem as good as the wire cradles, and cost less.

I warn your readers not to be misled by lists of trees and shrubs which it is said that rabbits will not eat. I have tried nearly all, and the only evergreens I find untouched are Yew, Box, and Rhododendron. My plantations are mostly narrow, bounded by grass or arable fields, and I keep no more rabbits than I am obliged to do in justice to the foxes, that these important animals may earn an honest livelihood, and not be driven to rob the farmyards.

Larch is the worst of all trees to get up amongst rabbits. They bark it even in summer, and eat it quite down. Spruce, Silver Fir, and Scotch Fir, are all eaten down in severe weather, especially when rabbits can reach to the top of them, though their bark seems less attractive. Do not, however, confuse the work of rabbits or hares with that of squirrels, which bite off the leaders of young Spruce, apparently to exercise their teeth, as they leave the tops on the ground. Squirrels must be killed if Spruce are to be reared. Oak, Spanish Chestnut, and nearly all forest trees are liable when first planted to be barked by rabbits, and should be protected as directed above. Of Holly, Privet, and common Laurel, rabbits and hares eat both bark and leaves. Broom hares bite quite down, even when of large size, and eat the young twigs. Berberis Aquifolium and Portugal Laurel are amongst the last shrubs touched, but in the present severe weather the rabbits are attacking young plants of both, biting the leaves off the former, though they do not seem to eat them, and barking the latter, though to no great extent. I have not spoken of choicer Conifers, but I find that Abies Douglasii, Cupressus Lawsoniana, Wellingtonia, and probably most of the others suffer more or less.

I may conclude by saying, that where cover for game is the chief object, nothing answers so well as the common Bramble or Blackberry, and the varieties of Briar or Dog Rose, including Sweetbriar. These take readily to any soil, require no nursing, grow very fast, and as shelter are far preferred by pheasants to the smooth-leaved Berberis, and to Rhododendrons.—C. W. D.

ANONYMOUS CRITICISM.

I HAVE read the article, "New Year's Hopes," by "WILTSHIRE RECTOR," in No. 510 of THE JOURNAL OF HORTICULTURE for this year, an article beaming with truth and kindliness. But I fear the medal has its reverse, and we should not, I think, refuse to look on the other side if by so doing we can effect further good.

After reading that article I was led to reflect on horticultural literature in general, and on the anonymous part of it in particular. For my present purpose I will divide our writers on horticulture into two classes. First, those who sign their names and addresses to their writings, and secondly, those who write anonymously. It is to the latter anonymous writers that I would now specially address myself.

I do not condemn anonymous writing altogether. What we call "leaders" may very properly be published anonymously, because in that case there is a clear and acknowledged editorial responsibility. Many good things have also been written anonymously, which, probably, never would have been written if the writer had been compelled to complete them by attaching his or her signature. But I think if a writer says anything that is derogatory to the productions of another, he is bound in honour to attach his name to his opinion. I will state a case which I think those who regularly peruse our horticultural periodicals will admit not to be an imaginary one.

A cultivator, after years of thought and labour, succeeds in raising something different from what has gone before. It is exhibited, and obtains a mark of honour, and he sees, or fancies he sees, a pecuniary as well as an honorary reward looming in the distance, when lo! some anonymous critic starts up, and by faint praise or subtle insinuations produces a state of scepticism in the public mind, which causes his novelty to fall flat in the market. The motives for this line of action are doubtless various. I need hardly pause to speak of those who from prejudice reject a good new thing, because they are punished severely enough by finding their neighbours' gardens or tables rejoicing in the possession of gems or viands which their warped judgment has rejected. The anonymous critic may be some brainless man, who cannot distinguish between a good thing and a bad one. He may be brainless, and envious in addition; himself incapable of producing anything superior, he endeavours from sheer envy to lessen the value of what others more skilful or persevering than himself produce. Or he may be a rival in trade—one of the sharks of society, who knows full well that if he can only induce the public to wait until he has purchased and raised a large stock of the novelty, he will reap a larger share of the profits.

I was told by a nurseryman of respectability and position not many months ago that the loudest declaimer against a new plant of his—a plant of rare merit—was the largest purchaser of it! And after this declaimer had purchased and raised a large stock of it, knowing that its merits must in time become known and cause a large demand, coolly changed his opinion, recommended it, and pocketed considerable profits. Now this was an injustice to the public, because everyone is anxious to possess a good thing as soon as possible; and it is a still greater injustice to the raiser or introducer, for it deprives him of the fair reward of his knowledge, skill, and labour. It is worse than the infringement of a patent—it is cowardly as well as dishonest, because here the patentee, so to speak, has no redress at law.

I think I have said enough to show that this is a blemish in our horticultural literature which calls loudly for a remedy. I admit that many indifferent, nay, worthless, things are continually palmed on the public by dint of puffing; but even here, as the puffer usually attaches his name, it would be more manly to question their merit by an open than by an anonymous attack

Let me then, in conclusion, deferentially and kindly, but earnestly, entreat my brother writers in horticulture not to abstain from expressing any adverse opinion they may hold on any new thing, but to place their names manfully in support of their opinions, that the public may know what weight to attach to them, and that those opinions may be fairly and honestly canvassed.—WILLIAM PAUL, *Waltham Cross, N.*

CHRYSANTHEMUM CULTURE.

I ASSURE Mr. Castle that I have no wish to disparage his mode of growing the Chrysanthemum, my object in writing being to elicit a few practical truths. I do not believe a Chrysanthemum grown from a cutting will in one season ever produce too much wood to form a specimen, and it is a well-known fact that some varieties will not produce enough under the most favourable circumstances. A point in favour of the use of liquid manure is the production of good foliage, which I consider contributes much to the beauty of the plant; and if vigorous wood and foliage be grown, large flowers will be the result. I cannot conceive why the plants should require additional nourishment after the flower buds are formed, as I think there must be a greater demand on the resources of the plant during the formation of the buds than in the development of the flowers; but I am not surprised that Mr. Castle's plants require additional stimulus by that time, for I am convinced that plants not plunged will require watering once, and in hot weather twice a-day, and I am of opinion that such frequent waterings with clear water for several successive months must greatly impoverish the soil. I must confess to never having seen a Chrysanthemum die through being overwatered; and were such a case to come under my observation I should at once assume the cause to be insufficient drainage, and not the too frequent use of the watering pot.

In plunging I make a practice of placing a piece of brick or an inverted flower pot under each plant for the purpose of drainage, and to prevent the roots from protruding through the bottoms of the pots. I still maintain that it is absolutely necessary to plunge pots in the open air to protect the roots from the vicissitudes of heat and cold. As regards the extra skill required in watering, I should hope there are very few men employed in gardens who have not intellect enough to

know whether a Chrysanthemum requires water or not. In a former paper Mr. Castle recommends August as the time for giving the plants their final shift, but he now recommends the first or second week in July for Pompons and early-flowering kinds, which is more in accordance with my own views.

As Mr. Castle hopes his writings will be received in good faith, I beg to assure him that they will be received in such by me; but as he differs from so many practical gardeners on various subjects, I think readers should be cautious not to arrive too hastily at conclusions.—H. Benham, *Upper Holloway.*

PLANTS IN FLOWER DURING DECEMBER.

Dec. 1. Veronica speciosa
Andersoni
salicifolia
candida
dentata
incana
sibirica
Cheiranthus fruticulosa
Helleborus atrorubens
fœtidus
niger
Liatris spicata
Lupinus albus
Chelone barbata
Koniga maritima
Hypericum calycinum
Linaria Cymbalaria
alpina
Linum grandiflorum
perenne
alpinum
flavum
Malva Morenii
Vinca minor
purpurea
Centaurea Cyanus
depressa
Euphorbia amygdaloides
Ajuga reptans alba
Campanula garganica
muralis
pumila
„ 9. Gaillardia picta
grandiflora
Richardi
Alchemilla alpina
Eryngium alpinum
Cedronella cana
Gynerium argenteum
Nierembergia gracilis
Tritema Uvaria
Verbena venosa
Jasminum nudiflorum
Alyssum saxatile
Geum rivale
Œnothera macrocarpa
acaulis
Lamarckiana
biennis
Drummondi
Mimulus maculosus
Viburnum Tinus
Arabis lucida
Zauschneria californica

Dec. 9. Scabiosa atropurpurea
Vittadenia trilobata
Mirabilis Jalapa
Delphinium Belladonna
Andromeda floribunda
Crocus Aucherii
Boryi
Pentstemon glabrum
Scouleri
procerum
„ 14. Antholyza coccinea
Erigeron Villarsii
Monarda purpurea
Thymus vulgaris
Achillea tomentosa
macrophylla
compacta
aurea
Tricyrtis hirta
Statice belliditolia
incana alba
Aconitum autumnale
versicolor
Omphalodes verna
Stenactis speciosa
Phlox setacea
verna
Ruta graveolens
Santolina incana
Polemonium cæruleum
Aubrieta Moorcana
Salvia fulgens
Primula acaulis
Colchicum autumnale fl. pl.
„ 17. Plumbago capensis
Scutellaria galericulata
Centranthus ruber
Asperula odorata
Potentilla alba
Sedum album
dentatum
purpureum
Cineraria maritima
Antirrhinum Tom Thumb
Silene pendula
Bupthalmum salicifolium
Polygonum Sieboldi
Brunoni
„ 20. Sedum cæruleum
Stachys lanata
Armeria vulgaris
Polygonum orientale
Delphinium Ajacis
Nigella hispanica

—M. H., *Acklam Hall, Middlesbrough-on-Tees.*

GLAZED WALL.

Just as I was about to accept an offer made me of twenty ground vineries at a certain price, a week or two back I observed your recommendation, for Vine-growing, of glass being put against a wall in the shape of a lean-to house, which article suggested to me that we should build a house 120 feet long and 12 wide against a certain wall covered with nice young Peach trees, &c., allowing them to remain there, and growing Vines as well up the 14-feet roof. We also wished to make this the home of bedding stuff during the winter. What size of saddle boiler should I require to heat such a place, supposing that 40 feet were heated by a chimney laid down as a flue, and the rest of the length by 4-inch hot-water pipes? Could we not have the house all in one, or would it be a disadvantage? Which is the best white Grape for a cold vinery?—Subscriber.

[We approve of your covering your Peach wall with a lean-to glass roof. The modes of doing so we have frequently alluded to. To do justice to the Peaches, the Vines up the rafters or roof should be fully 6 feet apart. These spurred will allow a very fair amount of light to reach the back wall. Royal Muscadine and Buckland Sweetwater will answer well in such a house, and so will Calabrian Raisin as a late Grape; but as you intend the house for wintering large quantities of bedding plants, it would be as well not to encourage late Grapes, but such kinds as you would cut by the middle or end of October. In such a length of house we would prefer a division of glass in the centre. We approve of taking a flue along one end of the house from the boiler, and that flue will keep out frost for the 40 feet proposed. Two 4-inch pipes to the other end from the boiler would also keep out frost. If more were wanted, more piping would be necessary. Were we heating such a house we should be inclined to make the one end from 50 to 60 feet long, put the furnace and boiler at that point, take the flue to one end and pipes there too, and pipes to the other end; thus you could have the one end of a 120-feet house much earlier than the other. We would use a saddle boiler 24 inches long, 22 wide, and 20 inches high, or about that size, which would enable you to have more piping if desirable.]

RED LEAD PROTECTING BULBS FROM MICE.

In answer to the inquiry of the "Rev. C. P. H." in vol. xix. page 477, respecting keeping mice from bulbs, I am enabled to state that I dust all my bulbs with red lead, and that not one of them has been touched by mice. Last year I did not dust the bulbs, and the result was that they were nearly all carried away by rats or eaten by mice.

I dust all my seed Peas and Beans in the same way, and not one of them is touched; but if by chance I sow one line without red lead they are usually nearly all devoured by mice.

I may add that I do not find the red lead injure the Pea crop nor the bulbs. I have known the mice bore after the Peas and Beans, and, finding them red-leaded, leave them untouched. —G. W.

MAKING BORDERS FOR WALL TREES ON BAD SUBSOILS.

On an entire renovation of the garden being made here, and when starting to take out the foundation for the wall, we had to go to the depth of 6 feet before a solid foundation could be got. After 20 inches of soil on the top, all the rest was loose red sand. I decided to concrete both sides of the wall to the width of 14 feet. When the wall was finished, the little good soil on the top was removed to the garden quarters, the sand wheeled right away to the depth of 30 inches at the wall below the ground-level, and 33 inches at the out edge, so that there is plenty of fall for water to run off; and along the front a drain was cut, 8 inches deep, and the width of a spade. Being all ready for the concrete, there was brought nice-sized gravel, laid in quantities of about four tons, and one ton of coal-ashes, to which was added one ton of lime fresh from the kiln, which had as much water thrown on it as make it fall; then it and the gravel were mixed together, covering all over with the ashes. After letting it lie in this state for twelve hours, it was well mixed by turning it over several times, adding more water if required, but keeping it rather adhesive than otherwise (as it sets quicker when not too free), and laying it on at once to the depth of 3 inches all over, beginning at one end, so that there is no treading on the concrete until perfectly dry. When smoothing it down, if found too firm and not smoothing well, have a watering-pot with a rose, and sprinkle a little water over it, but no more than will enable the operator to level it properly, bearing in mind to let it have the same fall from the wall to the outside as the foundation of sand on which it is laid. It must now be let alone until it is thoroughly hard, which will be in about ten days if the weather is fine and dry, when some nice round boulders were put all on the top, to the depth of 4 inches, and filling up the drain in front at the same time to the same level. Then a good thick sod, with the grass side downwards, was laid all over the drainage, before the regular filling-up with soil was commenced, which, when done, was raised 6 inches higher than the natural ground, to allow for subsiding, keeping it always a few inches higher at the wall—giving a gentle fall to the Box-edge. From the nature of our subsoil here, I have found these borders, through the very dry season which we have had, to contain more moisture than other parts of the garden which are not concreted.

Not wishing to spoil the wall by nailing, which has several objections, studs with eyes were put in between every third line of bricks, standing about an inch from the wall, having stronger ones at the ends to act as stretchers; and after the wire, which was galvanised, was passed through all but the end ones, and drawn tight; a 9-inch in length piece of small rod-iron, with an eye at one end to fasten the wire to, and nearly all the length, had a screw-thread worked on, when the wire had been fastened to the other end, put through the end stud; then a screw-nut was put on, so that all was made as tight as required. The first outlay may be a little more than the yearly bills for nails and shreds, but a very few years would soon cover the first expense, as a few mats go a long way in tying.

Trees trained to the wire here, in a general way, do not bloom so soon in spring as when close to the wall, and the fruit is cleaner and more regular in colour; and as for insects, there is no harbour at all for them.

From the success attending the above operations, I am induced to send them, knowing that where such a subsoil exists, if followed, the results will be as successful as here.—A. H., *Thoresby Park Gardens.*—(*The Gardener.*)

[The Editor of "The Gardener" remarks, "The young wall trees at Thoresby are models of health and fruitfulness"—just, we may add, as every department of that great garden is an example of Mr. Henderson's good management.—Eds.]

ROYAL HORTICULTURAL SOCIETY.

January 18th.

This was the first meeting of the year, and though the day offered a favourable contrast to those we have lately had, still everyone was surprised at the number of plants exhibited, and the unwonted gaiety which the Council Room presented, so early in the season.

Fruit Committee.—G. F. Wilson, Esq., F.R.S., in the chair. Messrs. Veitch & Sons, of Chelsea, sent excellent specimens of Snow's Winter White Broccoli, which was highly commended by the Committee. Mr. Tillery, of the gardens, Welbeck, sent a brace of Cucumbers, the variety raised by Mr. Hollah, of Rufford Abbey. Mr. Tillery stated that he had been cutting from two to three brace every week for the last eight weeks, and he considered it the best winter Cucumber. Signor Domenico Piccorillo, 41, Wigmore Street, sent a quantity of Naples Giant Chestnuts and Sweet Oranges. The Chestnuts were very large and fine, and a special certificate was awarded to the exhibitor. Mr. Osman, gardener to R. Holland, Esq., Stanmore Hall, Middlesex, sent a dish of nice St. Michael's Oranges, but they were not ripe. Col. Le Couteur, of Bellevue, Jersey, sent a dish of Bahia Navel Orange, the pips being produced in a nipple on the end of the fruit. The flavour was good, though rather acid. Alfred Smee, Esq., F.R.S., exhibited specimens of Lemon from Sicily, severely attacked with a scale which has attacked the Lemons all through Sicily with the exception of Palermo. Wherever this attacks the fruit it never ripens. This scale is allied to that which attacks the Oleander. Mr. Meredith, of Garston, near Liverpool, sent splendid bunches of Muscat of Alexandria Grapes, which received a special certificate. Mr. Tillery, of Welbeck, sent a bunch of Gros Guillaume and Trebbiano Grapes which had been cut for a month and kept in a bottle of water.

Messrs. Carter & Co., of Holborn, sent a dish of their Main Crop Potato, some of which were boiled to test the flavour, which the Committee did not consider of any special merit. Col. Le Couteur sent a collection of Pears from Jersey, consisting of Colmar d'Aremberg, Jaminette, and Pengethley, none of which were ripe. Mr. W. Ewart, the gardens, Apthorpe, near Wansford, sent a dish of very fine Easter Beurré Pears, which received a special certificate. Mr. Clark, the gardens, Rochampton Lodge, sent a good dish of Glou Morçeau Pear, which received a special certificate. Mr. Jennings, of Shipston-on-Stour, sent specimens of Fairy Apple, which was much admired for its ornamental character. Mr. Miles, the gardens, Wycombe Abbey, sent a dish of the Black Crab, or Pomme Noire. Messrs. Backhouse & Son, of York, exhibited a dish of Galloway Pippin, a handsome Apple, which was ordered to be cooked and then submitted to a sub-committee to report to the next meeting. Mr. Scott, Merriott Nurseries, Crewkerne, sent 250 varieties of Apples grown on the Paradise stock. These were sent to show "how well Apples keep when wrapped up in old newspapers. Mine were mostly sound. They keep until May, hardly any of them going off." The collection was in good condition, and received a special certificate.

Prizes were offered in Class 3 for the best three dishes of Kitchen Apples. The first prize was awarded to Mr. Turner, for remarkably large and fine fruit of Golden Noble, Alfriston, and Blenheim Pippin. The second prize went to Mr. Parsons, gardener to R. Attenborough, Esq., Acton Green, for Golden Noble, Blenheim Pippin, and Dumelow's Seedling, large and well ripened, though not equal in size to those from Mr. Turner. Good dishes of Blenheim Pippin, Bedfordshire Foundling, Gloria Mundi, Alfriston, and Golden Noble were also shown by other exhibitors. Class 4 was for Kitchen Pears. The best three dishes came from Mr. Turner, and consisted of Catillac, Uvedale's St. Germain, and Vicar of Winkfield. Mr. Gardiner, Lower Eatington Park, was second.

Floral Committee.—Mr. Fraser in the chair. From Mr. Denning, gardener to Lord Londesborough, Grimston Park, Tadcaster, came a splendid collection of Orchids, among which were magnificent specimens of Lælia anceps, Lælia autumnalis, Saccolabium giganteum, and Lycaste Skinneri; also Calanthes, Dendrobiums, Odontoglossums, and Oncidiums, and a beautiful specimen of Barkeria Skinneri superba, and a fine deeper-coloured variety of Lælia autumnalis. A special certificate was given for the collection, and special certificates for the fine specimen of Lælia anceps and Barkeria Skinneri.

Messrs. Backhouse & Son, of York, sent a fine example of Lælia autumnalis, a large-flowered variety, which received a special certificate.

Messrs. Veitch, of Chelsea, sent a fine collection of Orchids and other plants, for which a special certificate was given. In this were a large plant of Lælia anceps, a fine Mormodes Colossus which had a second-class certificate, Bolbophyllum auricomum bearing much resemblance to a Grass in flower, several Odontoglossums, Lælia anceps Dawsoni, a beautiful variety; Cypripedium vexillarium, a finely-coloured hybrid between C. Fairrieanum and barbatum, which received a first-class certificate; Phajus irroratus, a hybrid between P. grandiflorus and Calanthe vestita alba; several Palms; and an unnamed species of Stenorhynchus from Chiriqui, with waxy purplish-rose flower heads.

Mr. Burnett, gardener to W. Terry, Esq., Peterborough House, Fulham, sent a good example of Anæctochilus Lowii, Angræcum sesquipedale with five flowers; Cypripedium longifolium, delicately coloured, and very pretty; and Saccolabium Harrisonii and giganteum.

Mr. Green, gardener to W. Wilson Saunders, Esq., Hillfield, Reigate, sent a small group consisting of Sonchus platylepis, a handsome large-leaved Sow Thistle from Teneriffe; cut specimens of Æonium Holochrysum from the Canaries, forming very pretty golden pyramids, and Maxillaria leontoglossis, very pale yellow, spotted with purple.

Mr. Williams, of Holloway, exhibited a pretty group of Palms, Dracænas, Genetyllis Hookeri in excellent bloom, his hybrid Solanums loaded with fine high-coloured fruit, and several fine-foliaged plants. A special certificate was given. Messrs. Lucking Brothers sent forced flowers, such as Hyacinths, Azaleas, and Tulips, in ornamental baskets and china pot-holders, likewise several remarkably tasteful bouquets. For these exhibitions a special certificate was awarded. From the Society's garden, Kensington, came a collection of Orchids, including fine specimens of Cattleyas, Lycaste Skinneri, &c. For this a special certificate was given.

Mr. Ware, Hale Farm Nurseries, Tottenham, had a special certificate for an interesting collection of Succulent plants. Mr. Turner, Slough, sent Tricolor Pelargoniums Mrs. Headly and Mr. Rutter, which is to be seen again; also Chinese Primulas blush, lilac, and red. A special certificate was awarded Mr. Turner for these, also one for a fine collection of seedling Aucubas in berry, some with green others with mottled leaves, varying in the depth of their colour, and some of them bearing a remarkable profusion of berries. Mr. Stevens, of Ealing, sent a collection of well-bloomed Chinese Primulas and one of Cyclamens, for which a special certificate was given. From Mr. Williams came an Aucuba with large yellow berries, which, however, do not show to such advantage as the red berries; also Aralia platanifolia, which is likely to prove a handsome plant for subtropical gardens.

Mr. Wiggins, gardener to W. Beck, Esq., Isleworth, sent a fine collection of Cyclamens, a white, called album fimbriatum, being nicely fringed; Mr. Goddard, gardener to H. Little, Esq., Twickenham, several finely-coloured varieties, Snowflake, a fine white, and one called fragrans, delicately scented. A beautiful spike of Odontoglossum Blantii came from Messrs. J. Brooke & Co., Fairfield Nurseries, Manchester. This was awarded a special certificate. Mr. George, gardener to Miss Nicholson, Putney Heath, sent a yellow-berried Solanum of the Capsicastrum section, but the fruit was only partially ripe. Messrs. Dobson & Son, Isleworth, had a special certificate for a collection of Chinese Primulas, of various colours, of a fine strain. E. J. Lowe, Esq., Highfield House, Notts, contributed a rather numerous collection of new forms of British Ferns; of these Adiantum capillus-Veneris admirable, and Scolopendrium vulgare consummatum, received first-class certificates. Messrs. Cutbush and Son sent Aucuba japonica fœm. aureo-maculata with a large yellow blotch in the centre of the leaves, a finely-marked variety; and from Messrs. Carter & Co., High Holborn, came a case of the fruit of Solanum ciliatum (Lamarck), of which it is stated the plant grows from 12 to 18 inches high, has shining dark green foliage, and is well adapted as a pot plant for table decoration. The fruit is highly ornamental, being upwards of an inch in diameter, and of a fine reddish-orange colour.

Messrs. A. Henderson & Co., Pine-Apple Place Nurseries, received a special certificate for a fine pot of Lily of Valley, exhibited along with a group of Palms, in which were several very ornamental species for table and room decoration. A special certificate was given for the group. Messrs. A. Henderson likewise had a second-class certificate for Ficus lanceolata, an elegant dark-leaved species.

Prizes were offered for the best nine Ivies in pots. The first prize was taken by Mr. Turner, of Slough, with Hedera Helix lucida, a fine shining-leaved kind; latifolia maculata, lobata major, aurea, algeriensis, heterophylla, grandiflora pallida, the small-leaved variety, and maculata. These plants were trained as cones. Messrs. Lane sent a collection trained as pyramids on wire, among which were Rægner's, Gold-blotched, Clanwoodiana, and canariensis, all of which are very pretty. Messrs. Cutbush also sent two collections, among which were several of the above and other fine varieties.

Mr. W. Robinson sent a number of horticultural tools and instruments which he had collected during his recent travels in America; also various dried fruits, as Peaches and Plums, fruits preserved fresh in cans, Asparagus similarly treated, Indian Corn fresh, and prepared as Pop Corn pepper, in which state it is said to be like arrowroot for puddings; as well as Apples, Onions, and Potatoes, many of them from the Salt Lake. Dried specimens of a pretty alpine plant, from the summit of the Rocky Mountains, attracted considerable attention.

General Meeting.—G. F. Wilson, Esq., F.R.S., in the chair. After the election of thirty-two new Fellows, and the announcement

of the Committee awards, the Rev. M. J. Berkeley directed attention to some of the most remarkable subjects exhibited. With regard to Ficus lanceolata, he considered it would be extremely valuable if it proved as hardy as Ficus elastica, so would be the yellow-herried Aucuba if its berries retained that colour when older. The beautiful branched spike of Odontoglossum Bluntii also deserved particular notice, more especially as he believed it was the first time a branched raceme of it had been shown. He considered he ought to mention that the Easter Beurré Pears from Aptborpe Gardens were the produce of grafts he had brought from Lille, inserted in a Potato, in 1838; that winter, some would remember, was excessively severe, and it was many weeks before the grafts could be worked, and yet they had grown, and the tree was now in the most flourishing condition. The peculiarity of the Navel Orange, from Bahia, producing seeds only at the apex, and not in the pulp as with other Oranges, was then referred to as having a parallel case in the Portemanteau Gourd. Of Ada aurantiaca it was stated that a Frenchman, lately looking out for subjects for ornamental pottery, was enraptured with it, considering it one of the most beautiful of all plants for the purpose. Mr. Berkeley said he would mention, as an ornamental species, the Sonchus shown by Mr. Wilson Saunders but principally because there were other plants from the Canaries to which he wished to call attention, particularly the many shrubby species of Echium, which it would be extremely desirable to re-introduce for greenhouse decoration.

Mr. Berkeley then drew attention to the fruit of Stangeria paradoxa, the first, he believed, that had ever been perfected in this country, though male cones had been. This singular plant was allied to the Cycads, but was so like a Fern that it had been at first described as a species of Lomaria. The "Botanical Magazine" of 1859 contained a good figure of the male plant (t. 5121), and it was there remarked, "This very remarkable plant, which in its habit and foliage resembles no other of the Natural Order to which it belongs, was first in 1835 imperfectly noticed by Kunze as a South African Fern (Lomaria), and was sent by Dr. Stanger from Natal to N. B. Ward, Esq., and by him given to the Chelsea Botanic Gardens long after—viz., in 1851. It was first described by Mr. Moore, from imperfect specimens, as a 'Zamia-like Fern,' or 'Fern-line Zamia,' and the opinion expressed that its affinity appears to be rather with Cycadeæ than Ferns, which has since proved to be quite correct. In 1854 specimens with cones were exhibited to the Linnæan Society by Mr. Stevens (Proc. Linn. Soc. v. 2. p. 340), and since then both male and female cones have been produced at Kew, but unfortunately not in the same year. Of these, a pair of female cones, formed in April, 1858, produced perfect ovules, and withered away; and in the same month of the present year another plant produced the male cone figured in our plate."

Frequent complaints, Mr. Berkeley said, had been made by persons who had sown Aucuba seeds that they could not get them to germinate; he believed that this was owing to want of patience, for the seeds lay in the ground several months before germinating. Dr. Thomson had found them come up very well at Kew when sufficient time was allowed. The same remark applied to the Scarlet-berried Elder (Sambucus racemosa), to the beauty of which when in fruit in Aberdeenshire he had at a former meeting called attention, and he had since procured a mass of seed for distribution among the Fellows of the Society. If seeds slow of germination were sown in autumn they would mostly germinate in spring, but if sowing were deferred till spring they would often not germinate till the following spring. He would therefore recommend all persons to have the pots in which seed was sown properly labelled, and not to throw the seed away rashly. Mr. Robinson's collection, already noticed, was next referred to as being of an interesting character, especially the preserved fruit; and in connection with the Pop Corn used in puddings, Mr. Berkeley said the small compact varieties were the best for the purpose. He then produced some heads sent by C. W. Strickland, Esq., grown fourteen miles north of York, their perfect state of ripeness being in his (Mr. Berkeley's) opinion a great triumph for so northern a latitude.

Mr. Marshall said all must have noticed the frequent complaints which had been made of the similarity of our exhibitions, the sameness of the exhibitors and the subjects, and he would submit a proposition which he thought would tend to effect an alteration in this state of things. It was, however, only a proposition, and no doubt would admit of considerable modification and improvement, and in what points he would be glad to learn. It was this—that those who might be desirous of competing should send in their names to the Secretary of the Royal Horticultural Society, accompanied with an entrance-fee of £5, and at the same time name the twenty stove or greenhouse plants which they would prefer to grow, and out of which they were to exhibit ten in May or June, 1873. These were to be bought on a given day, in 6-inch pots, of any nurserymen who might be agreed upon by vote among the subscribers; the plants to be marked by means of a piece of tape, tied and sealed round the stem or lower branches, for the purpose of recognition, and be inspected once a-year, or more frequently if considered necessary, by some one appointed by the Council. The Society to give a challenge cup, value £50, which if won three times by any one person was to be his property. The entry fees to be divided into first, second, and third prizes, according to their amount and number. This scheme Mr. Marshall thought would remove what had been so often complained of—that young exhibitors had no chance against those who had been longer in the field, inasmuch as all would start at one time and show at one time.

The Chairman remarked as no one had come forward to claim Mr. Bateman's prizes for cut Cattleyas, they would be offered again at the next Committee meeting, which would be held on February 15th; also that the Annual General Meeting would take place on February 14th.

At the meeting of Council this day, it was decided to recommend Messrs. J. Bateman, F.R.S., John Kelk, and E. J. Lowe, F.R.S., to the Fellows for election at the next annual meeting, in place of Messrs. Andrew Murray and Sigismund Rucker, and Dr. Thomas Thomson, F.R.S., who retire. Mr. John Clutton is recommended as Treasurer, and Lieut.-Col. Scott, R.E., as Secretary. Messrs. Wilson Saunders, John Clutton, and Sigismund Rucker are nominated for the Expense Committee.

PORTRAIT OF MR. RIVERS.

In addition to those already announced, subscriptions have been received from the following:—

	£	s.	d.
Neame, J. R., Esq., Cambridge Terrace, Hastings	0	10	0
Pearse, Miss, Launceston	0	10	0
Tillery, Mr. W., The Gardens, Welbeck Abbey	0	10	6

FORCING SEA-KALE, ASPARAGUS, AND RHUBARB.

A dish of compact bushy *Sea-kale* from 4 to 6 inches in length is very different from that from heads which average from 8 to 10 inches long. We have several times been nonplussed at seeing in some of our largest places small houses filled with Asparagus before Christmas and onwards, and hundreds and hundreds of heads of Sea-kale coming in at once in a warm dark place. We felt ourselves at a loss as to how this could be done. We have looked at the large gardens and the large space devoted to Asparagus and Sea-kale, but knowing something of the little space a large piece of such plants can be squeezed into in a forcing house or pit, the wonder with us was where the plants were to come from year after year. We knew a clever cook who would not be satisfied with strong white Sea-kale some 5 inches in length, but would merely nip out the central part, about 1½ inch in length, and who wanted, therefore, an immense quantity for a dish. Why, the whole of our little kitchen garden, if all Sea-kale, would hardly have kept up a good succession from November to May at that rate. In seeing these large beds under forcing treatment, seeing also a good stock of such vegetables in summer, the wonder to us was—knowing that *Asparagus* plants taken up and forced are of no use afterwards—where these forcing plants could come from; but we are not at all surprised at some such cases now when we find that all the earliest successions are, as respects the plants used, bought every season. Under such circumstances Asparagus and Sea-kale may be had every day in winter, even if the garden is not very large. Such a daily gathering would be impossible where only a small space can be devoted to such vegetables, and dependance must rest on home-raised plants in the open air. We have thought it right to mention this so prominently, because many who, seeing what others have, are dissatisfied with the amount of Asparagus they have in winter, would be still more dissatisfied if they were not well supplied with shoots from the open air in spring. The gentleman who purchases freely in this respect, and has but a small kitchen garden, must have a greater and more regular supply than a proprietor in similar circumstances who depends entirely on plants of home growth. All this, simple though it be, is often apt to be overlooked.

Unless the ground is very suitable, deep, rich, and rather light, it is not often that Asparagus is worth taking up to force until it is four or five years old from the seed, and then the plants are of no further use. This taking-up plan and giving the help of a hotbed or a pit is, perhaps, the best for the first or earliest crop in winter; but it is always expensive, owing to the loss of the plants. For successions, it would be more economical to grow plants in beds, that could be forced by hot water or dung linings, forcing these beds every alternate year. The most of us with limited room take up a piece every year, and at first are satisfied with occasional, instead of daily gatherings.

For the later spring Sea-kale some similar plan to that referred to as respects Asparagus in pits may be adopted, and thus the same plants may pretty well be forced every year. For early supply we think it in every way the most economical to take up a lot of roots at the end of October, and place them for successions in a warm dark place—say in a tempe-

rature of from 55° to 60°, with 10° more at the roots. There is not the same loss with them as with Asparagus taken up, as instead of being of no further use after forcing, every bit of the forced roots, when cut up into 4 or 6-inch lengths, hardened off, and planted out, soon makes a fine plant. Of late, partly owing to birds interfering with the seeds, we have raised few Sea-kale plants from seed. We prefer planting the pieces of the roots in rows in the way referred to, and find they make better plants than seedlings. Some of these pieces grew so strongly the first season, that we have taken them up in the following November; but in general we let them have two summers' growth before raising them. Thus, supposing we plant the root pieces in March or April, 1871, we should generally lift to force again in October or November, 1872.

Rhubarb taken up to force may be transplanted again in the same way; but it is as well that each piece should have a bud. There is no necessity for anything of the sort as respects the roots of Sea-kale; we have used them as small as a straw of wheat; but we like them better if as large in diameter as our little or even our middle finger. These cut at bottom and straight across at top, and of the lengths specified, are planted with the dibber firmly in rows 2 feet apart from row to row, the upper end being close to the surface of the ground. To keep vermin from them, a cone of ashes is laid along the row. As the spring advances the upper end will bristle round the edges with buds, and the only trouble required is to thin these out to two or three. With seedlings there will only be the one bud. From seed sown in April we have had fine plants for forcing in the second autumn, but we think there is less risk from fly, birds, &c, by using pieces of the roots.

Our reason for alluding to the matter is, that we know there are thousands of cases in which the holders of gardens are satisfied with Sea-kale in the spring months, by placing a pot over it, with or without protecting material, as leaves or litter. They look upon getting fresh plantations, rearing seedlings, as something to be shunned. Many of these might have a dish not every day, but frequently during the winter, were they convinced that the roots taken up could be cut to pieces and planted again. We have seen very fine Sea-kale in a common cellar without any covering, where it was dark enough; and when wanted early the roots were packed in large pots, watered with water at about 100°, and pots placed over them and kept close to retain the heat. We have seen it very fine in a close box near a kitchen fire. In fact, it will do very well in any place where a little heat can be obtained along with darkness.

In the open air after this time, where appearance is no object, Sea-kale may be forwarded after the frost is out of the ground, by placing over it a foot or even less of clean tree leaves. The shoots will make little mounds in the leaves before they are 6 inches in length, so as to show you they want looking at. On taxing our memory, perhaps the very sweetest and whitest Sea-kale we ever saw was gathered from beds out of doors, covered in the autumn with 7 inches of bog earth, and that covered with a foot of litter. We have had it very fine covered with clean ashes, but these do not fall off so clean as the bog earth. Under pots it can be had very clean, the great point is to cut in time before it becomes lanky, and then every bit, except a scale or two at the base, should go to table. Much ground would be required if only the heart bit were cooked.—R. F.

HOAR FROST.

When summer droughts are gone, and autumn rains have ceased to fill the running brooks and flood the river banks—when the short sunless days and long cold nights have stolen from the soil its generous warmth—then the keen, mastering, all-subduing Frost wakes up from his long summer sleep; by slow degrees he throws aside the torpor of inactivity, and musters all his powers for the coming struggle with winter storms. With a cruel smile he mocks at summer's beauty and autumn's lingering growth, and in his long duration threatens to rob spring buds of their promise. Down from snow mountains, and over icy plains, and across frozen streams he comes nearer and nearer; a clear bright sky, not blue but white, and a sharp ringing air through which sounds travel fast and far, herald his approach. Through the dark hours of the night he steals silently along, working best and surest when night is dying into morning. Nothing can stay his progress, everywhere he spreads his pure garment of dazzling beauty; over fields, and hedges, and woods, and broad highways leading to busy cities, and lonely footpaths leading out into Nature's desolate places, he throws his glittering array. Nothing too high or too low; he climbs the loftiest hills, and sinks into the lowliest valleys; he covers with an equal grace thatched cottage, and ancient church, and stately hall, and sloping lawn, and creeping moss, and withered Ferns, and tiny pebbles.

He passes through quiet lanes and breathes his destroying breath on every wayside weed, or wandering insect seeking too late its winter home; he crosses with rapid strides the wide open common, and uttering a cry of distress the birds seek the shelter of the nearest covert; he lingers in the forest where the tall naked trees stand forth in their magnificence of form and branch and interlacing twig, and turns each venerable Oak and sturdy Elm into coral reefs of glittering whiteness; he hangs graceful plumes on the lady Birch, yet leaves not the smallest blade of grass or fallen acorn unadorned. He creeps into every hole and cranny, looks over every garden wall, enters every open door and unclosed shutter. He paints his colourless pictures on every cathedral window, and writes in pencil lines of exceeding beauty the ancient story of his visit on every pane of glass. He silences the sweet music of the running brook, changes all its laughing smiles to still cold stone. He interrupts the current of the mighty river, driving to its deeper depths the lives that sported near its surface. He presses on closer and closer to the homes of men, hangs glittering icicles round cottage porch where Roses and Jasmine so lately bloomed, and stands waiting for admission at the well-guarded door of princely mansion. He lays a cold heavy hand on every living thing that comes unfriended within his reach; he overtakes the laggard gardener, and seals the death warrant of his tender treasures. He hushes all too soon the redbreast's song, and tracks the thrush to its safe retreat within the warm entwining arms of the thick Holly. All around the dwelling places of men he weaves his sparkling web, turning each drop of moisture to brilliant crystal, subduing all colour to his ghost-like whiteness. He finds his way to every town and village, passing noiselessly through the open squares where wealth and plenty are safely sheltered from winter frosts; through narrow streets and dark alleys, where the want of food and fuel makes his presence keenly felt. He pushes his way through the porous walls of mean-built houses, sits by the hearth an unbidden guest, steals from the fire its accustomed warmth, from the home its welcome comfort; he brings strength to the strong, and weakness to the weak, enfeebling the feeble step, and blanching the maiden's cheek, and imparting a deep joy to the young strong life that can bear his keenest blasts. Over all the hoar frost throws a charm, a marvellous grace, reveals to us a new creation, before which we stand in reverent wonder.—Maud.

SNOW and ICE DESTRUCTIVE TO GLASS ROOFS.

We may here make some remarks as respects lean-to orchard houses that are at all flat, in reference to their carrying a good weight of snow when glazed with large squares, say 20 inches across from bar to bar. These lean-to's are rather more than 11 feet wide, 10 feet high at the back, and from 4 to 4½ feet high in front, according to the ground. Such a roof would subtend an angle of from 55° to 60°, and, therefore, be considerably flatter than a roof at 45°, the angle subtended by a right-angled triangle. On a roof at 55° the snow will lie longer than on one at 45°, but until this season we never knew it lie long enough to do any harm. In our larger house we do not think a square of glass was cracked, for the snow, as it got heavy, slid off, or melted gradually away. Here, however, nothing was done to interfere with the cold and the snow except keeping the house shut. In the smaller house other matters were alike, except that for securing comfort and preserving some things that otherwise might have been injured, a little firing was used in an iron stove, which tended to melt the snow a little towards the top of the roof, and the moisture trickling down towards the front under the snow froze in the sharp frost, and became a firm mass of ice and snow, which we could not move if we wished. The greater weight of this mass told on the glass in some cases, so that in looking over we found we had to replace two squares broken outright by this congealed weight, and we find there are four or five more squares cracked in the middle, which we shall replace the first fine day. Now, the cracking of these few squares we attribute not at all to contraction or expansion, but merely to the weight of the frozen mass of ice and snow over them, and that weight would not have been felt but for the heat from the iron stove and the keen frost acting together, nor if, whilst the snow was soft, we had swept the snow from the lowest part of the roof, as

then that on the upper part would have slid right off. The truth is, that we wanted the snow to lie as a good protection, and even in this respect we shall be gainers by it, as the benefit derived will greatly exceed the value and trouble of replacing five or six squares of glass.

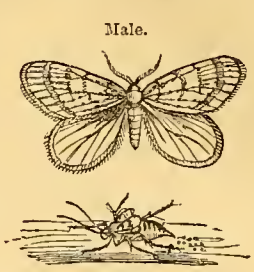
From such a simple matter a useful lesson may be learned. If there had been no artificial heat, if the lower snow had been moved, if the squares had been 4 or 5 inches less in width from bar to bar, or if the squares had been 21 or more ounces to the foot instead of about 15 ounces, then in either case it is likely that no square would have been broken.

We are quite aware that glass is often broken by ice forming and expanding in the lap betwixt the panes of glass. In steep-roofed houses, and even in sashes to pits that have a good incline, this is most apt to take place in frosty weather at the lowest squares, where the first square rests upon the wood, and that all the more in proportion to the heat used inside and the severity of the frost outside. When long squares are used, this often entails great loss from the chipping and cracking in front of these terminal squares. We have known cases in which, owing to very sudden and extreme changes of temperature, this cracking from the expansion of frozen water would take place here and there over a whole roof. Generally, however, it is the terminal front square of glass that suffers most from this cause. We say nothing now of puttied laps, and glass laid edge to edge without laps, and how far these would in the body of the house neutralise this ice-expansion. In our practice we have without glazed laps, but narrow laps made in the usual way, the glass lying as close as possible, square to square, suffered very little from the ice-expansion generally; but we have had a good many front squares cracked where the glass joined the wood. To counteract this, many years ago we had small squares of zinc, say, according to the space between the sashbars, of from 3 to 6 inches in depth, that terminated the glazing in front, the zinc instead of the glass resting on the front wood. The zinc was roughly grooved beneath to let condensed moisture out. In severe frost we have had these small zinc squares raised from the wood fully an inch in the centre by the expanding ice, but the squares of glass behind them were untouched. The zinc squares were easily brought to their level when the frost was gone. We have nothing of the sort in the orchard houses. As it is, we think we have escaped very well with so few squares cracked. It is where heat is used inside that the ice is so apt to accumulate at the bottom squares of the roof. With improved rafters and sashbars, to collect the condensed moisture, so that it shall neither fall over the house inside nor find its way out over the front plate of the sashes, there would no doubt be less of this accumulation of moisture and ice-expansion; but most of us are glad to get common conveniences, though we duly estimate all improvements.

There is another case in which these small terminal zinc squares are useful. Sashes for frames and pits are now often made with a narrower rail or plate in front than used to be the custom. These are often moved from the front as well as back. It matters not if you have ever such a nice handle for this purpose, if the front rail is at all narrow, the chances are if one hand holds the handle, the other seizes the front rail or plate, and smack goes a heavy thumb on the front glass, almost with the certainty of cracking it. The zinc terminal would save the cracking. "Ah! but how careless and slovenly." True, most true! but, unfortunately, the careless and the slovenly seem inbred and natural to most of us. You may paint all your garden and house doors very nicely, furnish them with all needful handles for opening and shutting, and you will be fortunate if in a fortnight you do not find your paint disfigured with dirty thumb and finger marks above and beneath the handles, where there is not the least occasion for them to be. Even nice finger-plates screwed on will not thoroughly save you from the annoysance, and yet the handle would have been sufficient for all that was wanted, without using the other hand to the style of the doorway at all.—R. F.

SOME PREDATORY INSECTS OF OUR GARDENS.—No. 2.

Some persons when hurrying along a country road or lane on a cold day in December or January, and endeavouring to persuade themselves that because they were walking quickly they were really getting a little warm, may have given a glance in passing at a paling or wall, and seen there sitting very composedly some male individuals of the Winter Moth (Cheimatobia brumata), shown in the accompanying figure. The dumpling-bodied females are, however, rarely seen in such positions, their business lying elsewhere. A momentary feeling of surprise may come across the observer, if he is at all interested in natural phenomena, that in the winter season insects should thus come forth; and if he think about it, he may propound the theory that the specimens are in a state of hybernation, and are waiting for the advent of spring. This is not so, however. The Winter Moth comes out from its state of torpor in the chrysalis state, and though it usually emerges during some mild break in the weather, it will live a certain time through frost and snow. A pleasant windfall many individuals prove to certain hungry spiders, who make prey of them in fault of better food. The appearance of this Moth seems suited to the season. It is not at all downy, but the wings present a bare aspect, which befits its wintry though brief life.



Cheimatobia brumata.

Now this brumata, harmless as it might be deemed when viewed only in its moth state, is a terrible destroyer of vegetation. The ravages of the species are to be noted most years, sometimes in the woodland scene, sometimes in the orchard, then again in the garden; for the caterpillar, though it has a great liking for Hawthorn, is in no wise particular, and will transfer itself very comfortably from one species to another as opportunity offers. But its *penchant* for Hawthorn is a decided annoyance to those gardeners, of both sexes, who pride themselves especially on their trim and verdant hedges. In other days I can remember more than once being warned off sternly by the owner of a garden plot, from whose hedge I had simply plucked a few leaves, without injuring a bough or even a twig; and in fact there have been cases where persons have been absurdly particular about their hedges enclosing their grounds, which said hedges were seen by their neighboure, and yet almost careless about the arrangement of the ground within and not open to inspection. Are not these persons comparable to certain others one meets with, who devote much time to the decoration of the exterior of the head, and trouble themselves very little about the right ordering of the brain which fills it?

To return to our Winter Moth, however. It is clear that a garden pest of this sort can only be effectually kept under by attacking it in its various stages at the different seasons of the year. Mr. Newman, whose labours in this direction—that is, in the investigation of the economy of predatory insects—have been so persevering, and as yet scarcely appreciated, points out minutely what may be done. The eggs of this moth, which are greenish white and of a tolerable size, are laid by the wingless females in crevices in the trunks of trees, sometimes also on the branches, and in nooks and corners. Every batch of eggs destroyed means not only the reduction of the caterpillars in the coming season, but cuts off also those of which, had they lived and thriven, they would have become the parents when they emerged as moths. Egg-hunting of this sort is tedious work, though one way of killing these eggs, Newman shows, is by deferring the pruning of fruit trees until after they are deposited, when the prunings will carry away a number of eggs with them. Of course it is understood then, that they must not be buried or scattered about. The moth is, perhaps, the most important object to attack, for it is as certain that dead moths lay no eggs as it is that dead men tell no tales. The German mode of proceeding is to daub a composition around the trunks or stems of trees likely to be ascended by the female moths. The best composition for the purpose, says Mr. Newman, is a mixture of Stockholm tar and cart-grease, a sticky-enough compound; and since the absence of wings necessitates the use of legs, and the moths, when they quit their chrysalis state in the earth, naturally move upwards, they may be taken in numbers by this expedient, the capture of the males being a matter of secondary importance.

The number of eggs deposited by each female varies from 150 to 200; and when thousands of these are thus entrapped and settled, the following spring is likely to show a great diminution in the number of caterpillars infesting the garden. Nor does any evil result then ensue to the trees or shrubs about which a circle of this composition is drawn, though it is admitted that "applied in the warm weather of April and May it has proved destructive in many cases, probably from its greater

fluidity at that time, allowing the tree to absorb it in drying." Also we note, "the composition tightens the bark, which should therefore be slit the next summer." Of the caterpillars while young the gardener generally takes little heed, and indeed it would be by no means easy to hunt them up when newly hatched, since they appear at the first expansion of the buds, which buds afford them their first supply of food. This is in the month of April, at which time the sparrows and other species of birds may be noticed to be busily engaged in an attack upon the buds, giving rise thereby to some controversy. It is asked, "Do they visit the buds for the sake of the caterpillars, or because they admire the flavour of the early vegetation?" Now, though birds are extensive destroyers of insect life, I conceive in this case that the buds are the primary object sought, the caterpillars being then very minute; still, as many are thus killed it lessens our indignation, and the birds' conduct may be deemed partly justified by the result. "There's no place like home," says the song, but if you have no home you cannot enter into the spirit of the utterance. Acting upon this, the caterpillar of the Winter Moth, as soon as it can, provides for itself a home amongst the leaves, and its food being all around, it can feed if it chooses without exposing itself much to view. Many must, in spite of this, be carried off by parent birds to their nestlings, and swarms are also killed while very young by the cold winds and spring rains. The colour of this caterpillar varies much from a pale green to a smoky black; it is one that even the entomological tyro at once recognises as belonging to the family or subdivision known as the Loopers (or Geometræ), though it usually rests, when getting of some size, in a one-sided posture, with the head curled round. I believe that a period of five or six weeks is generally sufficient to mature the caterpillar and prepare it to become a chrysalis. In some places children have been employed to pick off these caterpillars from bushes and the lower branches of trees. They may be beaten off in quantities also, as they readily drop from their retreats if this expedient can be ventured upon.

I referred in my previous paper to one conspicuous pest which annually visits our Currant and Gooseberry bushes. A little investigation will enable us, if we wish, to discover the eggs of the Phœnix Moth (Cidaria ribescaria) in those districts where it occurs, for it is not uncommon in various parts of the British islands, though I have not detected it in those places within the London district with which I am acquainted. These, which are deposited by the moth during the summer, are to be found in the bark of the bushes named, where they remain through the winter. The shape of these eggs is rather singular, resembling that of a powder-flask in miniature, and marked with ridges. The caterpillar rarely occurs in sufficient abundance to do any marked damage, differing therein from the too-well-known V-Moth (Halia wavaria), which, at the moment our bushes are getting a little reprieve from Abraxas grossulariata, begins to attack them unsparingly; and those who pick Gooseberries and pop them into their mouths without scrutinising them, are likely enough to eat a wavaria or two, as I have myself done. The V-Moth also deposits its eggs in the summer, and those who make a point of looking after the eggs of insects when there is little to be done in the garden, may succeed in detecting and extinguishing some of these. The caterpillars are unpleasant in appearance, warty, and very variable in colour, falling readily from their food with a slight shake, and remaining doubled up a long time. The chrysalis is placed amongst the leaves in a slight web. Though usually a July moth, in early seasons it may be seen in June—as, for instance, in the very warm summer of 1868, I noted some specimens were flying about at the middle of that month. This species is decidedly cockneyed, and succeeds in attaining its full dimensions in spite of London smoke—indeed some town specimens surpass in size others from a distance off.

One of the most curious particulars connected with entomological science is that regarding the long gaps which occur in the history of some species—how they are seen and then lost sight of for scores of years, to turn up again; or how some modern investigator verifies a fact which had been noted by a man who lived in the times of his great-grandfather. During the past year a new item of information turned up relative to a small beetle (a weevil), which Mr. Newman states was first written about in 1833, and subsequently the "Letters of Rusticus" contained some account of it; then, though often named as one of the enemies of the Turnip crop in field or garden, nothing of importance was recorded about it until Mr. Cordeaux observed its habits last winter. This little black weevil (known as Nedyus contractus), in spite of its size, is capable of inflicting considerable damage, and is only one, too, out of four or five insects which are partial to these vegetables. The author of the "Letters" had stated that "the eggs were laid on that part of the bulb which is above the ground, and the grub which comes from it eats into the rind of the Turnip, making it hump up into warts and all manner of rugosities." Mr. Cordeaux exhibits specimens "more or less covered by a mass of knobs and rugosities, in many cases completely altering the shape, and impairing both the quality and growth of the root. Each of these knobs or excrescences contains a small white grub, much sought after both by rooks and wood-pigeons, which come daily to feed upon them." It appears also that though all kinds of Turnips are attacked by this, the Swedish suffer least, being harder. How to best meet this enemy is a difficult question; the encouragement of the birds named, or of others which may play a similar part, would not do much good, for it is stated that their mining operations expose the roots to the influence of rain and frost; and, moreover, so determined are they to get all they can, that they pierce the bulbs in search of more when they have exhausted the knobs. As prevention is better than cure, some plan might be devised for the assailing of the imago, which, probably does its business in the early part of the autumn.—J. R. S. C.

NEW DOUBLE WHITE ZINNIA.

Why has not the double Zinnia been more grown than it is? During the hot summers of 1868 and 1870 it ought to have done especially well, and in the former year I saw it in the gardens of M. Souchet, at Fontainebleau, very fine indeed, while some fine stands were exhibited at the Metropolitan Floral Society's Show at the Crystal Palace last September; still they ought

to be more grown than they are, and when "well done" there are few flowers more effective. There have been attempts to prove that there are a dozen or more varieties of colour, but this is not so, some three or four—scarlet, orange, purple, and lilac, being clearly marked. I have now to announce a novelty in the way of a good double white. There is a dirty white in

commerce, but it is a *vaut rien*. This has been raised in America, and the stock has passed into the hands of the firm of Carter & Co., of High Holborn. The figure which is here given will afford some idea of the form and character of this fine novelty, although, of course, no idea can be given of its purity and elegance.—D., *Deal*.

National Tulip Society.—At a meeting of the subscribers of the Society held at Cambridge last year, after the annual show, it was resolved that the Exhibition for 1871 should be held in Manchester, and the Council of the Botanical Garden there have given £15 to the funds, will provide a tent for the Exhibition, also bottles and other things necessary, and will advertise the Exhibition along with their own. The Exhibition will be held on the 26th and 27th May, in conjunction with the National Horticultural Exhibition. Many growers have already entered, and, including the £15 donation, above £50 has been already subscribed.

WORK FOR THE WEEK.

KITCHEN GARDEN.

But little out-door work can now be done where snow has fallen, and it has done so pretty generally; men should therefore be employed about such work as can be done within-doors, which I have already pointed out. Set traps for mice, and destroy all vermin. Look after the crops of Peas and Beans in the ground. See to the manure heaps, prepare road-scrapings and charred refuse; and mix the rubbish wheeled from the vegetable ground with salt. This will form a valuable manure for the land. If possible do not employ the same description of manure twice in succession on the same land, a change will produce the greatest results. As soon as the young *Carrots* in the hotbed are about an inch high, thin them out to 3 or 4 inches apart. *Radishes* are sometimes sown on the same bed; when this is the case they should also be thinned out, and when ready for use they must be drawn with care, so as not to injure the tops of the Carrots. Should the weather continue severe, the frames containing young plants of *Cauliflowers* and *Lettuces* for spring supply, and the Cabbage Lettuce for present use, must be covered-up and well protected. *Mushroom* beds should now be made in sheds or houses purposely fitted-up for a spring supply. The horse droppings should be well beaten down, and the bed should not be less than a foot in depth. Temperature-sticks should then be thrust to the bottom in several places and examined daily; when the heat has become somewhat regular and not exceeding 90°, the spawn may be inserted just below the surface, and the bed afterwards earthed-up. Continue, as occasion may require, to cover a portion of *Sea-kale*. *Rhubarb* may also be forced in a similar way.

FRUIT GARDEN.

The general pruning and training of wall trees and espaliers may be proceeded with at all times, except during severe frost. Peaches, Nectarines, Figs, and Apricots are, however, better left for some time yet. Gooseberries and Currants may be planted in rows 5 feet apart, and trained as low espaliers. Where room is an object, this is an economical mode of growing them. These fruits may now have the necessary pruning. Take advantage of frosty weather to wheel manures to such fruit quarters as require that assistance. Newly-planted trees of all kinds should have their roots protected from frost by a mulching of litter or short dung.

FLOWER GARDEN.

The stock of bedding-out plants should now be looked over; if the stock of anything is short remove a portion of it into a warm house to produce cuttings for propagation. It is often difficult in the autumn to procure sufficient plants of some kinds, and cuttings of all the more softwooded plants struck in this and the next month and properly hardened-off, will bloom equally well with those struck the previous autumn. It is, however, advisable that bedding-out Geraniums and other woody plants which require to be of a certain age and size before they are transplanted to the open borders, should have been struck and well-established before winter, as fresh-struck plants of such are apt to grow too fast to produce a fine show of blossom. Be on the safe side as regards numbers, there is rarely an overstock at planting time. In all large places some odd corner is set apart for growing the shrubs and plants most commonly required to fill-up vacancies; where such is the case, cuttings of the more common ornamental shrubs may now be put in, with Honeysuckles, Roses, &c. Every description of plant used for the above purpose should be propagated, and the more showy herbaceous plants should always form a part. The stock of evergreens should be frequently lifted, that their final removal may be effected at any season without risk. In severe weather beds of Pinks are apt to be eaten down to the stumps by rabbits. Many florists' gardens are exposed to this serious disaster; it is advisable to protect the beds with galvanised wire-netting, placing some larch stakes, 2 feet out of the ground, at short intervals round the bed, to which the wire should be fastened. The depredations of rabbits would thus be effectually prevented, and I know of nothing better, even when there is none of these vermin in the vicinity, than a close-meshed wire net as a protection to beds of Pansies, Carnations, Tulips, &c., which are often more injured in spring from cold cutting winds than from frost. The Ranunculus bed should have attention; give it a slight forking over, throwing it up into little ridges; these can be levelled-down at any time previous to planting. Look over the collection of roots, separate the offsets from those which are large enough to bloom for planting in the reserve bed; these will flower splendidly the succeeding season. It is from want of this that we often see large spaces in the amateur's Ranunculus bed without a bloom. Hollyhocks appear to be coming fast into favour, not only as beautiful border plants, but also as a florists' flower for exhibition. Those planted in the border are extremely subject to the attacks of slugs, which greedily feed on the fleshy shoots; a dusting of soot occasionally will make these less palatable. Those plants which are wintered in pots must have the decayed leaves carefully removed. If flowers are required to occupy in spring the beds which are afterwards devoted to the usual bedding-out plants, they will have been planted, and such being the case, some choice ones now pushing may require a slight protection from severe frost. Sawdust, leaf mould, or old tan may be put over the best sorts of Anemones, Scillas, Hyacinths, and Tulips, covering the ground afterwards so as to resemble that of the other beds. The pleasure ground will require frequent sweeping and rolling, the walks to be rolled, especially after frost, and every attention ought to be paid to neatness and order. Deciduous trees and shrubs may now be thinned-out and pruned if necessary; evergreens, however, had better remain untouched for the present. Planting, too, should not be done at this season except in extreme cases, but ground to be planted may now be prepared with advantage.

GREENHOUSE AND CONSERVATORY.

Although it is not yet desirable to shift the general stock of stove and greenhouse plants for a few weeks, under some circumstances a part may require fresh potting at this time. When such is the case room must be made to keep them apart from the general stock for a short time afterwards, as their treatment will be somewhat different. Most softwooded plants require heading-back or pruning at the present season, and this should always be performed a sufficient time before the plant is repotted, in order to enable it to make a fresh growth. It is likewise often necessary, with this class of plants, to disroot them to some extent at this potting, which is an additional inducement to defer repotting till the plant has made sufficient growth—say young shoots an inch long—to enable it to bear the operation without injury. Attend to the training of plants on wires and trellises. Fast-growing plants, such as Tropæolums, will require frequent attention. Cinerarias will now require some assistance in the shape of weak manure water. Watch for green fly, to which this plant is very liable. As the principal kinds of Begonias will now be showing bloom, they may be advantageously removed to the conservatory, previously staking them carefully to preserve their fine foliage from being damaged. In some old conservatories the flues frequently run under the pathway, and are only separated from the bed in which the plants are growing by 4-inch brickwork. Where this is the case it may reasonably be expected that the soil in immediate contact with the brickwork will become dry at the bottom if fires are required, and yet may appear moist at the top; the soil should in such cases be examined frequently, and have water accordingly.

STOVE.

Stove plants will be much benefited by bottom heat and a moist temperature till active growth commence. Thin and tie out the shoots as they advance, to form the plants into the desired specimens, and guard against injuring the foliage. Much of the beauty of plants consists in their having clean, healthy foliage. Dry roots of Gloriosa, and a portion of the

stock of Gesneras, Gloxinias, Achimenes, and other herbaceous stove plants, may now be plunged in bottom heat to start them previously to potting.—W. Keane.

DOINGS OF THE LAST WEEK.

When writing on Saturday week the snow had all gone, and it has disappeared again on this the 14th, after quite as sudden a thaw; but the frost during the week has done more injury than the more severe frost preceding it, as even a day or two of mild weather, after an attack of frost, makes the plants more sensitive afterwards, and requires more care and consideration on the part of the gardener.

KITCHEN GARDEN.

Though we used litter and laurel branches when this week's rost set in, we fear that some of our earliest Broccoli and our earliest Cabbages have suffered considerably, even though we took these means to keep the frost from them. Lettuces and Endive of any size have also suffered a little, all plants from the previous mildness of the weather being full of juices and tender. We trust that when the weather changes there will be less injury than we imagine, but it will be prudent to sow some Lettuce, Cabbage, and Cauliflower in a slight hotbed, or in boxes in heated houses, so that any loss may soon be replaced. As yet Brussels Sprouts and the different Borecoles have stood well. The greater portion of our Savoys were used, but a number of heads of good size, though protected by the snow, have been injured in the heart, and therefore will be of little use.

We are rather surprised that so many of our cottage gardeners seem to have no relish for *Borecoles*, as Cottagers' Kale, Scotch Cabbaging Kale, and Brussels Sprouts, as they stand the winter when Broccoli seems to have a hard fight for it. We hear sad complaints amongst our cottager friends, who live in low positions, as respects their Broccoli, which they will persist in planting largely. True, a fine large Broccoli is a regular fill-pot, and is something for a family to come and go on, but when you cut the head it is all that you generally get, for we suppose, on the same principle, few of our cottagers care about the Sprouting Broccoli, which yields such an amount of produce; whilst, on the other hand, with Brussels Sprouts and the Kales it is cut and come again without end. When once the top is gone—and what can be more sweet after the frost has just mollified them a little?—there is no end to the shoots and sprouts from the stems. Though for a definite purpose we are fond of such Kales as the Scotch Cabbaging and Veitch's Dwarf, yet for a cottage garden we think there is little better than the tall Scotch Kale, as the supply from the stems in the spring months is next to inexhaustible, and well cooked they are not inferior to flavour to the best Broccoli. We so far join with Dr. Johnson as to have a high regard for the Cauliflower, but frequently we have found young Coleworts excel the most compact Cauliflower in delicacy of flavour.

We shall not have written these few lines in vain, if thousands more of our cottage gardeners be induced to grow more of these hardy vegetables, which nothing but a winter close on zero seems to kill. We fear that one reason why these hardy vegetables do not occupy almost every part of a cottage garden in winter is, that so frequently they are so badly cooked as to be both unpleasant and unwholesome to the person who eats them. With all the good properties of our English housewives, and in some respects we consider them unequalled, we fear that, as respects simple cookery, the statements made by a French refugee lady in the papers lately have too much truth in them. We have not been much in the habit of going to great dinners of late, but when we have gone to public, or at least large dinners on public occasions, it has often surprised us how difficult it was to get a well-cooked Potato; and the vegetables were so hard and yellow, that in the summer we have been glad to fall back on a little salad, or a simple bit of Lettuce, which the *artistes* in the vegetable department could not spoil. It is, therefore, not to be wondered at, that our simple lasses in the country do not know how to make the most of the hardiest health-imparting vegetables. A few lessons from the French lady, or any other lady, would be of importance. We fear that in this frosty weather, serious illness has been caused by cooking frozen vegetables before they have been thoroughly thawed in cold water. In such a condition they are next to poison. We know that in some hard limy waters it is not easy to boil vegetables jelly-soft without wasting them, or to prevent them turning out of a dirty yellow instead of a rich green; but even in such water a pinch of carbonate of soda will make the vegetables retain their proper colour, and the soda would do no harm to anyone. We like greens to be served green. Others may have them as yellow as they please.

But for the weather we should be thinking of putting Peas and Beans, and even a few Potatoes into the ground. We must forward them under a little protection. We were so far glad that we had a store of Sea-kale, Rhubarb, and Asparagus up as we could raise none during the week, the ground was so excessively hard; trenching and digging therefore were quite out of the question. These winter vegetables forced, along with Mushrooms, help us very much in the winter season, when we have less variety out of doors. Their goodness very much depends on their texture.

Mushroom House.—We have made our first bed in our renovated house, rather late as it happens. The bed was made chiefly of long litter, with a mixture of droppings, as they came from the stable, turned over and watered until it became about half as much decomposed as the old gardeners would have required for a Cucumber bed. It will soon be fit for spawning, when an inch or two of droppings will be added on the surface. A little dry turfy soil was added to help to consolidate it. Before commencing, the ceiling was run over with a thin coat of oil and anticorrosion paint to prevent condensed moisture resting there, and as all the platforms are of wood well seasoned, which, with the exception of the spars for the bottom of the beds, we shall expect to last at least twenty years, we had the whole, with the exception of the spars, coated three times with anticorrosion paint to keep the damp out. If the wood had not been so thoroughly dried and well seasoned, we should have preferred retaining it in its natural state, but nicely planed. We are quite sure that under some circumstances wood will last longer unpainted than painted. Painting green unseasoned wood is one of the best means of securing premature decay from dry rot and internal fermentation.

Something would be gained in this direction if the simple fact were more acted upon, that wood will last longer when always dry or always damp than when frequently exposed to extremes of wetness and dryness: hence it is next to incalculable how long sound piles of wood will remain sound when kept several feet below water-level. A good oak post will remain sound for many years when kept in a pretty equable state as respects moisture under ground—much longer than the bulk of the post above ground, subject to greater alternations of heat and cold, dryness and wet, and the wasting influence of the air on each crack and cranny. But the greatest and the most rapid decay takes place close to the surface of the ground, because there the greatest extremes of dryness and wet are the most frequently experienced.

We have hinted above that we had our Mushroom house repaired, and not too soon, as on a cold snowy morning during the week we lost the old thatched roof of the old shed from which we have obtained large quantities of Mushrooms. We fear the beds bearing will have been greatly injured. The roof was picturesque enough in its worn-out mossy condition, and we felt sorry to lose it, and all the more, as we cannot be sure as to how. It is just possible that there might have been a live cinder in fresh soot placed there the night previously, but if so, nothing was seen until morning, and then, wet as the outside of the roof was, it was soon in a smouldering state from end to end. It is also possible a spark from a tobacco-pipe in dry litter might be the cause. We can never be too careful in little matters. We should not like to interfere with the lovers of "the weed," but we do know that many smokers are excessively careless of lucifers and sparks from their pipes. When we have it on good authority that men will be heedless enough of consequences to smoke even in a powder manufactory, we need not be so much surprised that there will be smoke amongst combustible materials in farms and gardens. All such carelessness is very reprehensible, and we have no doubt disastrous consequences frequently ensue. There are right times and right places for doing most things. There are men who seem to have a pleasure in doing a thing just because it is forbidden to be done: hence the zest with which a stolen pipe, as it were, is smoked because the time and place are strictly forbidden. These stolen pipes are the dangerous pipes. There is often gross selfish injustice in such practices. We have travelled in railways much less of late, but now, since for the accommodation of smokers there are smoking carriages, why should almost every carriage be tainted with tobacco, to the discomfort of those who detest it, whilst the smoking carriages are seldom filled? When we went to the great show at Oxford our clothes

were tainted for twenty-four hours. More than half the passengers in crowded ordinary carriages smoked heavily the whole way, without the slightest apology, whilst we noticed that the smoking carriages were not half filled. Now, we will only say, that be a smoker a garden labourer or a gentleman, there is nothing manly or honourable in smoking in a wrong place. A man worthy the name of man would scorn to realise a paltry pleasure which he saw to be a cause of discomfort and often of injury to others.

FRUIT GARDEN.

We have done little except in the way of pruning, watering a Peach house beginning to push, cleaning and pruning other houses, and taking more Strawberry plants into a little heat. Unfortunately the mice have attacked the buds again, notwithstanding all precautions. It is very annoying after getting fine plants. Beginners in setting their potted plants in houses would act wisely in using no saucers until the flower trusses appear strongly. Stagnant water at the bottom at an early stage, and saturating the buds with water, make a wreck of many a fine Strawberry pot. In moving the plants into houses all the old outside leaves may be removed, and a little fresh surfacing given. The bottom of the pots should also be examined to see that the hole is not clogged up outside, which it often will be if the pot has stood on the gravel. All forcing, where very early produce is not required, should go on but slowly in such weather. Where Peaches happened to be in full bloom during the last three weeks, how great must have been the disadvantage as to their setting well, with scarcely a blink of sun to cheer them! We shall be later with many things than usual, owing to changes in the houses—heating, staging, &c.

ORNAMENTAL DEPARTMENT.

Here, out of doors, the work has chiefly been confined to sweeping walks, and pruning Laurels, Ivy hedges, &c., burning the mere rubbish, and using and storing the best for protecting purposes. We have also collected a good store of pea sticks and material for flower stakes—a matter of importance where coverts are sacred grounds in summer—also a good quantity for fire-lighting purposes. As we had to move a lot of cut Black and White Thorn, we did not care to be troubled with it for furnace or other fireplace purposes, so we set fire to a number of loads, and turned it quickly into charred refuse, merely covering it with damp rubbish to subdue the flame, and clearing out as soon as charring was effected. In a few hours we thus obtained some cartloads of charred rubbish, much not better than charcoal dust, but there were many little bits ranging from ⅛ inch to 1 and 1¼ inch in diameter. For all such small wood we find we obtain the greatest quantity of charred material by charring and removing it quickly. For large wood the old mode of covering up with turf and earth is the best, and watching it properly night and day before all the heap is charred, allowing no more air to enter than will support slow combustion.

We have prepared places for propagating, potting, &c., yet we were disinclined to move plants much in such weather, but if the thaw continues, next week we shall do much in this way. Those who are inexperienced have little idea how soon plants suffer from great extremes of temperature, even for a short time.—R. F.

TRADE CATALOGUES RECEIVED.

E. G. Henderson & Son, Wellington Road, St. John's Wood, London, N.W.—*Catalogue of Vegetable and Agricultural Seeds.*

W. Cutbush & Son, Highgate, London, N.—*Catalogue of Vegetable, Flower, and Farm Seeds.*

Butler, McCulloch, & Co., Covent Garden Market, London, W.C.—*Spring Catalogue of Seeds for the Kitchen and Flower Garden, &c.*

Barr & Sugden, 12, King Street, Covent Garden, London, W.C.—*Descriptive Spring Catalogue of Choice Seeds for Flower and Kitchen Garden, &c.*

George Gibbs & Co., 25 and 26, Down Street, Piccadilly, London, W.—*Catalogue of Seeds for the Garden and Farm.*

R. Parker, Exotic Nursery, Tooting, Surrey, S.W.—*Catalogue of Agricultural, Flower, and Vegetable Seeds, &c.*

TO CORRESPONDENTS.

N.B.—Many questions must remain unanswered until next week.

Maud.—A letter is at the post office as "A. M."

Books (*R. Atkinson*).—"The Treasury of Botany" is in the alphabetical form; indeed, its second title is "a popular Dictionary." It is the latest. The price is 10*s*. There are no cultural directions in it. (*W. B.*).—"The Cottage Gardeners' Dictionary," with Appendix, including new plants to the end of 18.7, is price 6*s*. 6*d*., or post free 7*s*. 2*d*.

Journal of Horticulture (*C. M. McCrow*).—No such reduction is made.

Horticultural Directory (*A Young Head Gardener*).—It will depend upon the place you are managing.

Aucuba *J. W. K.*).—The male is similar in leaf to the female Aucuba japonica so long known, usually with leaves spotted with yellow, but sometimes entirely green. *Vera* is merely a nurseryman's addition to the name. *Picta* has leaves with a broad yellow margin. You will find a very full descriptive account in vol. xvi., pages 254, 255.

Waterproofing Calico (*J. D. L.*).—The only composition likely to render your calico jackets waterproof, is Indiarubber dissolved in naptha and then brushed on the calico. A few yards of Mackintosh cloth would have been far less trouble, far more sightly, and not much more expensive.

Parallelogram (*A Subscriber for Many Years*).—To erect a perpendicular line, and find point C accurately, is described in fig. 31, page 447. As line A B is 41 feet 4 inches long, and line BC, 62 feet long, the radii of the circles referred to are determined. From the stake at point C, with a line 41 feet 4 inches long, trace an arc as in point D. From the peg at point A, with a line 62 feet long trace an arc cutting the former one; where the two arcs cut each other is point D.—M. O'Donnell.

Cyclamens (*Welshman*).—We cannot recommend any florist; all the principal florists can supply what you need if you inform them. (*R. McK.*).—We quite agree with you in highly prizing the Cyclamen as a table decoration. You will have seen notes on its general culture in our last week's number.

Epiphyllum truncatum Flowers Drooping (*F. W.*).—We have no doubt that their short continuance in flower is due to the temperature; we would move them to the cooler house whilst flowering, and for twelve months after flowering keep them in the warmer house, removing them only when in flower. When they begin to grow they require a rather moist atmosphere, and should have copious waterings at the root, but avoid in all stages keeping the soil in a saturated condition. When the growth is over, it is sufficient if the soil be kept moist enough for the stems to remain fresh. We do not recognise the plant from the part sent, flowers are necessary.

Snowdrops after Flowering (*Arthenice*).—The plants would be better of a light airy position free from frost, and should be kept in a cold frame until they have been hardened off, and then they should be planted out in the open ground. This is a better plan than allowing the bulbs to ripen in pots. They are of no use for flowering again in pots, but are very useful for borders.

Berberry and Almond Planting (*Idem*).—Both may safely be planted from the present time up to April in mild weather, but the earlier it is done the better.

Centaurea candidissima (ragusina), Iresine Herbstii, and Golden Feverfew Sowing (*James S.*).—Sow the seeds of all early in March, in pans filled with a compost of two parts turfy loam, one part sandy peat, and one part leaf soil, with a free admixture of sand. The pans should be well drained, and the surface of the soil made even and fine. Scatter the seeds regularly, and just cover them with fine soil. Water gently and place the pans in a hotbed of from 70° to 75°, and a top heat of 55° to 75°, keeping them near the glass and the soil moist, but not very wet. Continue the plants in the hotbed after they appear, keeping them near the glass and affording them plenty of air, so as to prevent them from drawing up. When large enough to handle pot-off the Centaurea and Iresine singly in small pots, and the Golden Feverfew in pans, placing the plants about an inch apart; return them to the hotbed, shade for a few days, harden-off when established, and remove to a cold frame but protecting from frost. They will be nice plants by the beginning of June.

Plants for Shady Border (*Wm. R. H.*).—Ajuga reptans rubra, Glechoma hederacea foliis variegatis, Nierembergia rivularis, Sedum anglicum, Saxifraga umbrosa, and Vinca elegantissima, which, though it grows taller than you wish, is very ornamental.

Tea Roses for Forcing (*A Lady Reader*).—It is in our opinion better to plunge the Roses in their pots if wanted for winter forcing, rather than to take them out of their pots and plant them in the ground. We should recommend shifting them into larger pots previous to their being plunged, so as not to have to disturb the roots in repotting when they are brought in for forcing. Put good drainage, and stand the pots in the ground on inverted saucers or slate to keep the worms out. Place them in cold frames as soon as winter frosts set in, and bring them into a light double-span house when they are wanted for blooming, being careful not to force too rapidly at first. They do not require bottom heat, which often causes mildew. The best bottom heat they can have is to be set on open wooden staging with hot-water pipes under.

Tropæolum Jauratti and tricolorum Culture (*Farmer*).—The tubers should be potted in September, or before they begin to grow, in a compost of light fibrous loam, sandy peat, and leaf soil in equal parts, with a free admixture of sharp sand. Good drainage is necessary, and in potting it is well to place the tuber on silver sand. Pot so that it shall be covered with soil. Water so as to keep the soil sufficiently moist, and place the pots in the greenhouse in a light airy position. The shoots will need a trellis or other support.

Geranium Leaves Going off (*H. A. B.*).—The leaves sent us have the appearance of suffering from damp accompanied with cold. Could you not give them a more light and airy position with an increase of temperature? Is there much manure in the compost used for potting, and is the watering no more than sufficient to keep the foliage from flagging?

Mushrooms in a Cellar (*A Subscriber*).—In our number published last 6th of October there are full directions. They are too long to reprint. You can have a copy if you enclose four postage stamps with your address.

Fruit Trees Laid in (*J. J. H.*).—Your several hundred fruit trees laid in the ground will not be injured by the severe weather, if they have not been kept in bundles so that the frost could reach the roots from these being insufficiently covered with soil. We advise you to spread some dry litter over them, and leave them covered-up until the ground is thoroughly thawed. We think they will be quite safe. The "Botanical

Magazine" is published in monthly parts, price 3s. 6d. It may be obtained through any bookseller.

Cistern in Greenhouse (*Subscriber*).—It will benefit rather than deteriorate the air in the house.

Dracæna Leaves Browned (*E. C., Kent*).—The Dracæna leaf seems as if it had had a chill, or been scorched by the sun when damp; but Dracæna leaves, just like those of evergreens, do not last always, but a few are lost every year.

Raising Vines from Eyes (*A Beginner*).—The eyes can be struck in a Cucumber frame, where the pots may be plunged in a bottom heat of 75°, and a corresponding top heat. The eyes may remain until they have not room enough, and should then be moved to a house where they can have a brisk bottom heat and a moist top heat, potting as required. Train the canes from 12 to 16 inches from the glass, and far enough apart to allow them room to develope their foliage. It is not likely if grown with Cucumbers that they would form canes of sufficient strength for fruiting next year, for under such circumstances it is hardly possible to give them the light and air they require to form strong well-ripened canes.

Potatoes (*G. A.*).—Messrs. Barr & Sugden advertise Thomas Almond's Yorkshire Hero, and also Rintoul's New Early White Don, but we do not observe Transell's Seedling down in their present list.

Potatoes for Seed, and Frosted (*R. S.*).—Neither unripe, nor badly grown, nor small Potatoes will do well for planting; in fact, I prefer unripe tubers as seed, and of course the smaller they are the nearer they should be set together, and the closer the rows should be. Thoroughly frosted Potatoes will now be perfectly soft, and the sooner they are separated from those which remain firm, and are cast away, the better. Then the tubers which are firm had best be spread thinly, without touching each other, on a dry floor or upon boards, and be allowed to remain there till they show signs of vegetating, and in that case they will certainly do for seed; but should they show no sign of pushing by a month or two hence, let them be boiled down for the pigs, or otherwise used in the household by those who do not object to discoloured or sweet-tasting Potatoes. The unripe, uglies, and the little ones had better undergo the spreading process in a dry twilight shed, or somewhere secure from frost, and when their shoots are tolerably prominent, scoop away the inferior "sprits," leaving one or two of the strongest eyes from each tuber according to their size, and that will prove a means to secure a much finer and more even crop. This practice is more to be regarded than early planting. —R. Fenn.

Heating a very small Propagating House (*Novice*).—We think that heating by a tank in a house 10 feet by 9 feet, and heating by piping, are both good. Were we, as you propose, to heat the small propagating house by means of a conical boiler, we would prefer having on each side a bed 3½ feet, a pathway of 2 feet, two 3-inch pipes covered with rubble under each bed, and two 2-inch pipes all round for top heat.

Cover for Heated Tank (*Calcaria*).—Perforated zinc will do very well for covering your tank, provided the water in the tank is rarely above 170°. Slate covered with cocoa fibre refuse, if you keep the bottom of the cocoa fibre damp. When it becomes thoroughly dry the heat will not rise freely through it. It looks cleanly on the top, and the heat given to the bottom of the pot is prevented escaping. Clean ashes or sand answer very well in such circumstances, as all the heat comes from the slate. Even in their case, though it may often be advisable to keep the surface rather dry, that next the slate should be moist, which is very easily managed.

Proposed Hot-water Piping (*R. T. B.*).—We prefer No 1, with three flows and one return.

Cucumber House (*T. M., Rochdale*).—You do not tell us whether your house is to be a lean-to or span-roofed. As it is to be 12 feet by 8 feet inside measure if it be span-roofed, we would have a bed of 2 feet 9 inches on each side and a pathway down the centre. If a lean-to, a bed of from 3 to 4 feet wide in front would do, and there might be narrow shelves on the back wall for pricking out seedlings, &c. In either case, for early work you would need two 4-inch pipes below the bed and two pipes all round for top heat—that is to say, to work in the dead of winter. A small boiler would therefore be necessary, but, as often stated, it is always expensive to heat a small place with hot water; but if you regulate the firing by well attending to draught as lately stated, you will minimise the loss of heat by the chimney. If we had to heat such a place for Cucumbers that we did not commence with until the first or second month of the year, we would, in the case of a lean-to house, take a stout flue all round except the doorway, enclose the flue in front of the house for a bed to be placed over it, and leave the back flue exposed for top heat. If you give more particulars we may be able to do better for you.

Converting a Building into an Ice House (*Young*).—By your proposed plan you would so lessen the size of the house if you built the wall inside, that the house would be little more than 10 feet by 6 feet inside. Now it is 12 feet by 9 feet. Were we to make that house into an ice house we would leave it of that size, and sink the floor inside not 3 feet, but 6 or 9 feet, build another wall outside the present house 9 inches from the other, leaving the space between airtight—pretty well as good as stuffing the space with straw or sawdust—and then have a roof of 18 inches of thatch over the present tile roof, and the eaves reaching beyond the outer wall, which outer wall we would cover with as light a colour as possible.

Utilising House Sewage (*A. B. G.*).—We mix the entire sewage of the house by letting it run into a tank, and we apply it in spring and summer by means of a pump, either by hose or bucketsful, to Asparagus, Rhubarb, Cabbageworts, Onions, &c., having gutters made purposely between the rows. In winter, if needed, it may be poured over vacant ground.

Name of Fruit (*Joseph Burgess*).—Hollandbury.

Names of Plants (*J. Wills*).—Physalis Alkekengi. We did not know, until shown by its effect on your writing, that the juice of the fruit totally obliterates ink. (*James*).—We cannot name plants from their leaves only. (*R. Giddings*).—1, Dendrobium Gibsoni; 2, Cyrtochilum leucochilum (*J. J., Romsey*).—Nephrodium molle. (*A. S. B., Norfolk*).—Æschynanthus Paxtoni. (*J. M.*).—The Oncid is O. barbatum. The other we do not yet recognise.

POULTRY, BEE, AND PIGEON CHRONICLE.

INQUIRY.

In reply to Mr. Preston's inquiry on January 5th, I beg to state that at the beginning of October I sold George White, 147, Culford Road, Islington, about fifteen fowls, for which he agreed to give me £3 18*s*. He acknowledged their arrival, and said he would write again soon. Hearing nothing further, I wrote again, when he replied he had mislaid the invoice, and asked for another, which was sent. Afterwards I wrote for the money several times, generally receiving no answer. At last "Rogers" wrote, saying Mr. White was in Scotland, and would not return till December 14th, when my letter should be attended to. Since this date I have written three times on the subject, and received no reply. My last letter was returned, saying he had gone away. Seeing your inquiry, I forward this statement as a warning to others.—C. B.

THE "STANDARD'S" CORRESPONDENT ON CARRIER PIGEONS.

I have thought proper to draw your attention to an article on the Antwerp or Belgian Pigeon which has appeared in the *Standard* newspaper, Tuesday, December 27th, and I believe there is a second article by the same person in a more recent copy of the *Standard*, which I have not yet seen.—R. W.

[In reply to "R. W.," I beg to state that I have read both the letters in the *Standard*. I was glad that such letters should appear in a widely-read daily newspaper, because the wonderful powers and utility of the messenger Pigeons would thus come before the notice of many who are wholly or partly ignorant of such birds, reaching thousands of persons who are entirely out of the range of the fancy and its special organs. Mr. R. W. Alldridge, of Old Charlton, Kent, the author of the letters, wrote them, I have no doubt, with a good motive, but they are not free from error, and a part of his second letter is certainly not written in good taste, and reflects in harsh, and I can venture to say, untruthful terms (doubtless from ignorance) upon Pigeon fanciers. Speaking of the English fancy Carriers, the high-class birds, he says they will not bring up their young; this is a mistake, for they, as all fanciers know, are excellent parents. Mr. Alldridge also errs in regard to first-class homing birds being worth only 1*s*. each. He is also in error as to the preference given by him to young birds, in one case of actually nine weeks old, over birds of mature age. His preference of hens over cocks is also, I think, an error, as well as his objection to using birds while breeding.

But there is a passage in Mr. Alldridge's second letter which I particularly wish to notice; it is this—"For those who care to know all about Pouters, Fantails, and such-like useless fancy kinds—kinds I again strongly advise your readers to have nothing to do with, for I presume I am not addressing members of the 'fancy,' or subscribers to some Pigeon club, held at the Pig and Whistle, somewhere—for such persons there are books published, which they can peruse, and, possibly, derive great satisfaction therefrom. I have never read one, and have not the least intention of doing so, as I am not a 'Pigeon-fancier' in the usually accepted sense of that term, or a Pigeon-dealer." Now, I do not in the least know what position in life Mr. Alldridge occupies, but I can assure him that I, as a clergyman and rector of a parish, and an ardent Pigeon-fancier for life, know the principal fanciers in England, Scotland, and Ireland, and that his sneer at the fancy is wholly misplaced. Very frequently—indeed, it is almost a law in human nature, people most strongly condemn what they least understand. Mr. Alldridge says he has never read books on fancy Pigeons (I possess nearly a dozen, and some very high-priced ones), and most certainly he does not know Pigeon-fanciers. As to the "Pig and Whistle," I remember being present two years since at the annual dinner—rather banquet, of the North British Columbarian Society, held at the Hanover Hotel, Glasgow, where the company consisted of gentlemen of private fortune, officers, merchants, and men of large means and good position. After dinner a handsome piece of plate was presented to the President, and really—really Mr. Altdridge, the whole affair was not of the "Pig and Whistle" kind. Then I received a card of invitation to the dinner of the National Peristeronic Society, held at the dining-room of the Crystal Palace. Mr. Alldridge may call the Crystal Palace "The Pig

and Whistle," but I do not. Indeed, his sneer is wonderfully misplaced. Ladies of title and gentlemen of position are among our Pigeon-fanciers and exhibitors, as any reader of this Journal knows. The odd thing is that, after many years' experience and knowledge of the fancy, the only low-class fanciers I have ever known are some of the fanciers of flying Pigeons. There are artisans who keep them, Dragoons, Skinnums, and Antwerps, and walk out on Sundays to fly their birds. I know the scamps well enough; pipe in mouth, oath on lips, betting money in pocket, workday clothes on, out they walk to spend their Sunday, not at church, but at—"The Pig and Whistle." On the other hand, those who keep high-class fancy Pigeons—Pouters, Carriers, Fantails, &c., usually have them, as I do, for ornaments of a garden and pets for the family. Pigeon culture and Pigeon books are not among things to be despised, though Mr. Alldridge appears to think so, yet he may see how highly men of the calibre of Charles Darwin regard them; *vide* his work on "Animals and Plants under Domestication."

Although the fancy for homing Pigeons has been much in the hands of the lowest class of fanciers, yet I hope even those given to the culture of the high-class varieties will adopt Antwerps for nurses of their Pouters, and that as a means of national defence as well as pleasure this variety will be very extensively bred.

One word more on the mistakes of general writers in regard to Pigeons. In an edition of "Buffon's Natural History," published by Warne in 1869, and "modernised from the most recent authorities," now lying before me, I read at page 184, "The tame Pigeon and all its beautiful varieties is said to derive its origin from the *Stock* Dove, implying its being the stock or stem whence the other domestic kinds have been propagated." This antiquated mistake ought not to have again appeared. Then in *All the Year Round* of November last, in an article entitled "Messengers Aloft," the writer tells us that "the written paper is fastened under the Carrier's *wing*." There are also other gross blunders in the same paper.

In regard to Mr. Alldridge's letters, I again say that I am glad they have appeared, for both poultry and Pigeons ought to be kept, as the present war proves to us, in far greater numbers than at present. I press, therefore, upon fanciers to spread all they can among people generally the utility of homing Pigeons.—WILTSHIRE RECTOR.]

NENTHEAD POULTRY, PIGEON, AND BIRD SHOW.

THIS was held in the new school rooms on the 13th inst. The buildings are admirably adapted for the purpose of a poultry show, being well lighted and very spacious. All the arrangements were very good, and the Secretaries did all they could to add to the comfort of the birds under their care. Mr. James Dixon, of Bradford, acted as Judge.

The first class was Black and other Red *Game*. This was the best class in the Show, and out of the ten pens five were highly commended; the cup for the best pen in the Show also went to this class, and was won by Mr. W. Walton, who took the second prize as well. The cup pen, we learnt, had been successful at several large shows previously. The chicken class contained some very good birds; Mr. Thomas Brown's were capital pens. The Duckwings were all that could be wished for as regards quality, but the entries were small. The *Hamburgh* classes were not good, and none of the birds shown would have had any chance of winning at one of our large shows. The two first-prize *Spanish* pens were good, but the rest in the two classes very middling. There were only seven pens of *Polands;* the prize pens were good, also the highly commended and commended pens. The Game *Bantams* were of medium quality, and only eleven pens were shown. The class for a pair of hens of any breed contained some first-class birds; the first prize went to Game and the second to Spanish, and three pens were highly commended.

The *Pigeons* were for the most part of only medium quality, and as there were only four classes, the entries were not numerous.

Of *Cage Birds* there was a good collection, divided into twelve classes. The cup for the best bird in the Show was awarded to a very good Belgian Canary, belonging to Mr. R. Walton, who also took the second prize in the same class, besides several other prizes in the Marked classes.

GAME.—*Black-breasted and other Reds.*—Cup and 2, W. Walton, Cocklake*hc*, J. Morton, Marley Hill; T. Brown (2); T. Henderson, Craig Nook; W. Liverick, Nenthead. *Chickens.*—1 and 2, T. Brown. *hc*, J. Walton, Annatwall; T. Brown. *Any other Variety.*—1, T. Brown. 2, W. Walton. *Chickens.*—1 and 2, W. Walton.

HAMBURGHS.—*Golden-spangled.*—1, J. Todd, White Lee. 2, J. Morton. *Chickens.*—1 and 2, J. Todd. *Golden-pencilled.*—2, J. Stephenson, High House. *Chickens.*—1, R. Sim, West Cramlington. 2, J. Stephenson. *Silver-spangled.*—1, J. Hilton, Whigglety. 2, Walton & Rutherford, Green Ends. *Chickens.*—1, J. G. Millican, Alston. 2, Walton & Rutherford. *Silver-pencilled.*—2, J. Stephenson. *Chickens.*—1 and 2, J. Stephenson.

DORKINGS.—1, W. Walton. 2, Walton & Rutherford. *Chickens.*—1, W. Bear park, Ainderby Steeple. 2, J. Percival, Nenthead. *hc*, J. Hilton.

SPANISH.—1, H. Williamson, Danby. 2, Bell & Burn, Alston. *Chickens.*—1, H. Wilkinson. 2, J. Wilkinson.

POLANDS.—1, J. Chaplow. 2, W. Bearpark. *hc*, P. Swindle. *c*, R. & W. Walton.

GAME BANTAMS.—1, F. Clementson. 2, W. J. Stewart, Darlington. *Chickens.*—1, W. Wilkinson. 2, J. J. Walton, Alston.

COCHIN-CHINA.—2, J. Dickinson.

ANY OTHER VARIETY.—2, G. H. Savage, Nenthead. *Hens.*—1, P. Swindle. 2, Bell & Burn. *hc*, H. Robinson, Nenthead; W. Bearpark; Walton & Rutherford.

DUCKS.—1, R. Sim. 2, J. Kindred, Bailes.

PIGEONS.—*Pouters.*—1 and 2, J. Guthrie, Hexham. *Carriers.*—1 and 2, J. Guthrie. *Tumblers.*—1, J. Guthrie. 2, R. & W. Walton. *Any other Variety.*—1, J. Guthrie. 2, W. R. Little, Alston.

RABBITS.—2, W. Hewitson, Wesrdale.

CAGE BIRDS.

CANARIES.—*Belgian.*—Cup and 2, R. & W. Walton. *Golden and Silver-spangled Lizard.*—2, J. Guthrie. *Yellow.*—1, R. Walton. 2, W. J. Stewart. *Buff.*—1, J. Robson, Nenthead. 2, J. Dickinson. *Yellow-marked.*—1, R. Walton. 2, W. Hetherington. *Buff-marked.*—1, W. J. Stewart, Darlington. 2 and *hc*, R. Walton. *Green.*—1, J. Guthrie, Hexham. 2, J. Ritson, Alston. *Dun.*—1, J. Stephenson. 2, W. Spark. *Best Couple.*—1, R. & W. Walton. 2, Tatters and Swindle.

GOLDFINCH.—1, J. Guthrie. 2, W. Walton. *Mule.*—1, J. Hind. 2, J. Bayne.

BULLFINCH.—1 and 2, J. Stephenson.

CORK POULTRY SHOW.

THE annual Exhibition of poultry, Pigeons, and Cage birds was held on the 4th inst. in the Athenæum, and was on the whole a complete success. The entire collection far exceeded that of any former year. The collection of Pigeons, although not so numerous as in previous years, was select, and of the highest quality. However, there was a great falling-off in the Cage birds, there being comparatively few exhibited. The following is a list of the prizes:—

SPANISH.—1 and 2, R. P. Williams. *hc*, Lady A. Lloyd; J. C. Cooper. *c*, Mrs. Hay; J. C. Cooper.

DORKINGS.—*Grey*—1, R. P. Williams. 2 and *c*, J. C. Cooper. *Chickens.*—1, J. C. Cooper. 2, T. O'Grady. *hc*, Mrs. Taaffe. *c*, Capt. Dowman. *Coloured.*—1, J. C. Cooper. 2, *hc*, and *c*, Mrs. Hay. *White.*—1, Countess of Bandon. 2, Miss Perry.

BRAHMAS.—*Dark.*—1, G. A. Stephens. 2, J. C. Cooper. *c*, Lady A. Lloyd; T. Babington; J. C. Cooper. *Light.*—1, Capt. Dowman. 2, H. L. Tivey, sen. *c*, Capt. Dowman; Mrs. Hay.

COCHINS.—*Buff.*—1 and Extra 2, Mrs. Hay. 2, W. H. Perrin. *hc*, J. Dowling. *c*, Mrs. Taaffe; W. H. Perrin. *Partridge.*—1, R. P. Williams. 2 and *hc*, Mrs. Taaffe. *c*, J. Topp. *Any other Variety.*—1 and Extra 2, Mrs. Taaffe. 2 and *vhc*, Col. F. C. Hassard. *Young.*—Cup, Mrs. Hay. *vhc*, H. Perrin. *hc*, W. G. Mulligan.

HOUDANS.—1, J. C. Cooper. 2, Mrs. Clay. *c*, J. C. Cooper; E. J. Poer.

CREVE-CŒUR OR LA FLECHE.—1, W. C. Pickering. 2, Viscountess Doneraile (La Flèche). *hc*, G. A. Stephens (La Flèche). *c*, C. Carleton (Crève-Cœur).

HAMBURGHS.—*Spangled.*—1, Countess of Bandon. *Penciled.*—1 and *hc*, T. O'Grady. 2, Countess of Bandon.

POLISH.—1 and 2, R. P. Williams. *c*, J. K. Milner; E. Hobbs.

GAME.—*Red.*—1, G. A. Perrin. 2, P. Ducrow. *hc*, E. J. Poer; T. O'Grady. *c*, Mrs. Taaffe. *Any other Variety.*—1 and *c*, G. A. Perrin. 2, W. Johnstone. *hc*, M. Cramer.

BANTAMS.—*Red Game.*—1, T. O'Grady. 2, G. A. Perrin. *c*, N. E. Wallace; E. J. Poer; Col. F. C. Hassard. *Any other Variety.*—1 and *c*, P. Ducrow. 2, T. O'Grady.

BANTAMS.—*Any other Variety.*—1, L. F. Perrin. 2, G. A. Stephens.

TURKEYS.—1, J. C. Cooper. 2, W. C. Hamilton. *Poults.*—1, J. C. Cooper. 2, Countess of Bandon. *hc*, W. C. Hamilton. *c*, T. O'Grady.

GEESE.—*Toulouse.*—1, J. C. Cooper. 2, R. P. Williams. *hc*, P. Ducrow; W. H. Perrin. *Any other Variety.*—1, J. C. Cooper.

DUCKS.—*Rouen.*—1, R. P. Williams. 2, R. W. Boyle. *vhc*, J. C. Cooper. *Aylesbury.*—1 and *hc*, R. P. Williams. 2, L. F. Perrin. *Any other Variety.*—1, Countess of Bandon. 2, J. C. Cooper.

SELLING CLASS.—1, J. Jeffries (Cochins). 2, Capt. Dowman (Silver-spangled Hamburghs). *c*, Lady A. Lloyd (Silver-pencilled); Mrs. O'Callaghan; Mrs. Taaffe; P. Ducrow (White Cochins); Mrs. Marmion (Spanish); J. Dowling (Spanish); J. Hosford (Dorkings); Mrs. Murphy (Polish); Capt. Dowman (2).

PIGEONS.

POUTERS.—*Black or Blue.*—*Cocks.*—1, J. Lloyd (Blue). 2, J. H. Perrott. *Hens.*—1, J. H. Perrott. 2, F. W. Zurhorst.

POUTERS.—*Any other Colour.*—*Cocks.*—1, F. W. Zurhorst (White). 2 and *hc*, J. Lloyd (Mealy). *c*, J. K. Milner; J. H. Perrott. *Hens.*—1, J. H. Perrott. 2, F. W. Zurhorst (White). *c*, J. K. Milner (Red); J. K. M'Donnell.

CARRIERS.—*Black.*—1, R. W. Smith. 2 and *hc*, J. Jeffries. *c*, F. W. Zurhorst. *Any other Colour.*—1 and 2, J. Jeffries.

BARBS.—*Black.*—1 and *hc*, J. Dowling. 2, J. Jeffries. *c*, R. W. Smith; J. Jeffries. *Red or Dun.*—1 and 2, J. Dowling. *hc*, J. Lloyd (Red). *Yellow or other Colour.*—1, J. Jeffries (Yellow). 2 and *hc*, J. Dowling (Yellow). *c*, W. H. Bennett (Yellow).

OWLS.—*Blue.*—1, W. Johnson. 2, J. M'Donnell. *hc*, J. Jeffries; H. L. Tivy, jun. *c*, H. L. Tivy, jun. *Any other Colour.*—1, J. Dowling (White). 2, Withheld.

TRUMPETERS.—1, J. H. Perrott. 2, R. W. Smith. *hc*, J. H. Perrott; H. L. Tivy. *c*, H. L. Tivy.

JACOBINS.—1, T. O'Grady. 2, R. W. Smith. *hc*, J. Dowling. *c*, J. K. Milner F. W. Zurhorst.

FANTAILS.—1, T. Martin. 2, Master R. A. Blennerhassett. *c*, T. Martin; J. F. Blennerhassett; R. W. Smith.

NUNS.—1 and 2, J. Dowling.

TURBITS.—1, J. Dowling. 2, H. L. Tivy. *c*, F. W. Zurhorst; J. Dowling; H. L. Tivy.

MAGPIES.—1, T. O'Grady. 2, J. M'Donnell. *hc*, R. W. Smith.

TUMBLERS.—*Short-faced.*—1, F. W. Zurhorst. 2, Master R. A. Blennerhassett. *Common.*—1 and 2, J. H. Perrott.

ANY OTHER VARIETY.—1, F. W. Zurhorst (Runts). 2, J. Dowling (Blue Dragoons). *hc*, J. K. Milner. *c*, F. W. Zurhorst (Ice); R. W. Smith (Spots).

SELLING CLASS.—1, J. Jeffries (Barbs). 2, J. K. Milner. *hc*, H. L. Tivy (Black Barbs); J. Jeffries (Barbs) (2); T. Martin (White Fantails); F. W. Zurhorst (White Trumpeters). *c*, W. H. Bennett (Yellow Barbs and Red or Dun); R. W. Smith (White Fantails and Yellow Owls); J. Perry (Nuns); F. W. Zurhorst (White Dragoons); H. L. Tivy.

BEST THREE PAIRS OF JACOBINS, NUNS, AND TURBITS.—Medal, and 3, J. Dowling. 2, J. M'Donnell

CAGE BIRDS.

CANARIES.—1 and *hc*, T. Babington. 2, J. Hosford. *c*, J. Heap.

BULLFINCHES.—1, Countess of Bandon. 2, Miss M. Dowling.

GOLDFINCHES.—1, J. Dowling, jun. 2, P. Keating.

LINNETS.—1 and 2, P. Keating. *hc* and *c*, J. Dowling.

THRUSHES.—1, J. A. Ross.

SKYLARKS.—1, M. Daly. 2 and *hc*, D. Higgins.
ANY OTHER VARIETY.—1, J. Hosford. 2, Capt. Stuart, R.N. *hc*, Miss D. Beamish. *c*, J. Lloyd.

THE NEW YORK POULTRY SHOW.

WE have received the prize list of this Show, which commenced on December 14th, and by it we find that the whole of the President's special prizes for European Poultry were carried off by exhibitors from Great Britain; the great gold medal being taken by Mr. J. C. Cooper, of Limerick; the gold medal by Mr. H. Beldon, of Bingley; and the silver medal by Mr. J. C. Cryer, of Southport.

Mr. Cooper has also taken the *American Agriculturist* prize for the best Dark Brahmas, with six of their chickens; Mr. Leavitt's silver cup for the best pair of Buff Cochins; and in the general prize list is third for Buff and Lemon Cochins, second and third for Dorkings, second for Silver-Grey Dorkings, first for Black-breasted Red Game, third for Brown-breasted Red Game, second for Black Spanish, fourth for Crêve-Cœurs, second for La Flèche, first for Sultans in the Miscellaneous Class, first for Toulouse Geese, first for Sebastopol Geese, third for Rouen Ducks, third for Aylesbury Ducks, and first for Mandarin Ducks.

Mr. Beldon, in addition to the special gold medal, took a special prize for the best collection of Hamburghs, was fourth for Dorking chickens, commended for Duckwing Game, first for Black Spanish, first for Golden-spangled and Silver-spangled Hamburghs, first for Golden-pencilled and Black Hamburgh chickens, first for Black African Bantam chickens, and first for Helmet, Turbit, Magpie, Fantail, Antwerp, and Jacobin Pigeons.

Mr. J. H. Cryer, in addition to taking the special silver medal, was first for Spanish chickens, Black Polish, and Silver Polish; second for Golden-pencilled Hamburgh chickens, first for Silver-pencilled Hamburgh chickens, second and third for Black Red Game Bantams, first for Duckwing Game Bantam chickens, first for Red-legged Partridges, first and second for Labrador Geese, first for Grey Call Ducks; first for Carrier cock, and second for Jacobin Pigeons.

BRECON POULTRY SHOW.

I AM Secretary to the Breconshire Agricultural Society. At a special meeting of the members of that Society held on the 28th May last, to consider the desirability of establishing a show in connection with the annual show, it was decided to grant the sum of £10 to the committee of the poultry show, upon the distinct understanding that no further liability rested with the Agricultural Society. Mr. D. Thomas, jun., and Mr. Phillips, both solicitors at Brecon, were the self-constituted committee of the poultry show, and as such attended the meeting of the members of the Agricultural Society. By their desire I acted as secretary to the poultry show, in which capacity I received a large portion of the entry fees, and duly registered them in the entry book. On the 16th of September last, a few days before the show, Mr. Thomas borrowed the entry book from me, and I have not been able to get it back, although I have repeatedly asked for it. Messrs. Thomas & Phillips themselves entered a number of fowls for competition; the former paid me his fees, and gave me the proper entry forms, but the latter did neither. They have now, or ought to have (for I maintain that the prizes should be the first charges upon the funds), the monies which were taken at the gates on the show days. Lord Tredegar, The Hon. Godfrey Morgan, and Lord Hyde were patrons, and of course subscribed to the funds; but as I have not received anything from them, I presume the committee have. None of the prizes, that I am aware, have been paid. I am being threatened with proceedings to recover the prizes awarded, but I have not sufficient money in my hands to enable me to pay, or I would gladly do so; and the committee will not hand over to me any of the monies in their hands, although they have recently received the £10 from the Agricultural Society.

I am of opinion that, considering all the circumstances, all the monies should be paid over to me as secretary; but still I have offered to hand to Messrs. Thomas & Phillips all the monies in my hands if they will produce to me the entry book, shewing and marking what entries I have received, which they have not yet done, and I cannot think that under the circumstances I should be justified in handing the monies now in my hands to them. Seeing that they have, or could have if not paid, the several subscriptions, the fees for the entry of Mr. Phillips' fowls, the takings at the gates, and the £10 from the Agricultural Society, I make out the funds in connection with the poultry show to be ample to pay all prizes and expenses, and leave a small surplus. Therefore, why the committee should thus throw obstacles in the way of settling the various claims I cannot explain; perhaps they will be good enough to do so.

Thinking this explanation due as well to the public as to the several subscribers and those persons who obtained prizes, I trust you will give it publicity in your next paper.—W. M. BRIEN.

THE YORK RABBIT SHOW.

YOUR correspondent "J. B." has often written to me of his trials as a Rabbit exhibitor, and he also wrote after our Show was over, thanking me for my attention to the Rabbits, stating how well his stock looked when they arrived home, and I really think he might have adopted the same course, and dropped me a line in a friendly way, instead of occupying space in your valuable Journal. After the judging was over my man (himself a Rabbit-fancier of thirty years' experience) said, "Some one has sent his Himalayan Rabbits in a fine box, well divided, and has actually put a pair of Rabbits into one compartment." I asked him to point me out the pen, but he was unable to do so on account of the multitude of hampers and boxes he had had through his hands. Probably it was "J. B.," who must remember we are all liable to mistakes, that had put a pair of Rabbits together in one compartment in packing them off to York. I have heard it said that the most careful men often make the most mistakes. That is the only way I can account for the disaster. I now say this, and say it emphatically, that no pair of Rabbits were ever put together, or ever broke through the partition, for that was impossible at the York Show. Every possible precaution that man could devise was used to guard against any accident of this kind. If the doe has had young ones (and I do not doubt it) it is no fault of mine. The Rabbits were never handled but by Mr. Rayson, the Judge, and the packers. "J. B." says she kindled on January 6th; she arrived at York on December 5th, so that just accounts for it. "J. B." in his careful haste put both the Rabbits together.—M. MILLINGTON, *York*.

BIRMINGHAM TUMBLERS.

"READER" informs us we have omitted to mention two peculiarities in the Muffed Tumblers. We omitted them because they are not worth mentioning, and the birds can be bought at any cage or Pigeon shop for 10*s*. per dozen. True it is that some fanciers who devote their whole regard to flying and working birds, consider they obtain better birds by pairing any colour, or muffed and clear-legged birds together, and so they do; but these men are as jealous of the pedigree of their birds as one who breeds the highest-class fancy varieties. Many of them have had the breed or strain their birds come from for years. Do not suppose we mean they have been inbred for that time, for it is pairing wide in feather and family that gives them strength and vigour for their wonderful performance. To see a kit of this kind would astonish and gratify even one who had a distaste for Pigeons—they must be seen to be understood. These men obtain their cross from fellow fanciers who have been equally careful not to admit any bird without knowing his pedigree. But still the birds are worthless for feather, and their owners even have a prejudice against pretty birds, and a prejudice it really is, for to our knowledge some of the handsomest breed the best working young ones; we have seen them roll and mad tumble in the superlative degree; indeed, the only thing to fear in the majority of the dark-winged varieties is, that they may be too good, and yet at the present time they are long-muffed, and would never break without crossing with a clear-legged bird.

What "READER" means by hazel eyes we do not know, it is a colour we have not seen, but that there are no hazel-eyed Pigeons we are sure. The origin of the black or bull eye, which we suppose he means, on the white-winged Tumblers, would be as profitable to pursue as the origin of the white rump on the Blue Rock. They may come from Holland, Germany, or elsewhere, but we will get rid of them as soon as we can.

We do not disapprove of young England's favourites, but think it far wiser to improve the Muffed Tumblers, to bring them in size and shape to his standard, than to anathematise them as some do. We know of some as small, as compact, as good-carriaged birds as any of old England's or young England's Tumblers; but it is a work of time to discard all the evil and keep all the good of a breed with so many faults as the Muffed Tumblers originally had. We hope to see the Muffed Tumbler take the position that a short time more of cultivation will justify it in asking for.—BIRMINGHAM COLUMBARIAN SOCIETY.

THE FANTAIL.

IN commenting upon this singular variety of Pigeon it is almost necessary that we should preface our remarks by a few observations relative to the present varied opinions held by Fantail breeders, with regard to its characteristics considered of most importance. The conflicting opinions of fanciers have too often been manifested to need more than a passing reference to show the importance of establishing a standard in order to tone down, or settle, if possible, these differences, so that those young fanciers who seek enlightenment as to the real merits may not be discouraged by such contrary opinions as are at present promulgated, and which certainly must be quite as annoying to the fancier as embarrassing to the experienced judge. We do not suppose that all fanciers will follow our standard and depart from their own peculiar views, but we will endeavour to make clear our opinions, and lay them before the fancier to draw his own conclusions.

There appears to us to have been raised a local model in most districts where the culture of the Fantail has been at all cared for, and, as a consequence, we too often find that what one judge has denounced to-day as unworthy even of a commendation, a brother fancier and judge to-morrow pronounces perfect,

and signifies such by the award of a prize. Thus our exhibitions are frequently looked upon, from the fancier's point of view, as mere lotteries—scrambles for honour, or gain, or both, with a result far more gratifying to the wondering visitor than it is to those more intimately concerned. And it is to this reasonable cause, we think, may be attributed the fact that many staunch fanciers fall out of the ranks of exhibitors; and that others less skilled or educated in Pigeonology are deterred from taking part in so hazardous a speculation, and therefore either ride their little hobby in obscurity, or content themselves with such many-coloured spangled mongrels as may be seen upon our English farmsteads or at the poultry-shops in our busy towns, rather than submit to change of fashion or the various flights of fancy to which, as exhibitors, they are so often subjected.

We must not be supposed to be taking to task as referring to any of our qualified judges individually or collectively, for to all persons so engaged we would give our hearty support, and would strive to obtain for them the utmost freedom for their candid views, and also the greatest forbearance for their mistakes, for to such errors the most zealous fanciers or experienced judges are liable. In no variety is there greater allowance necessary than in the judging of a number of pens of Fantails, for in their carriage and deportment it may be truly said they are

as changeable as the shade, and in consequence due allowance should be made. It is simply our desire to settle *great* points and merge *little* differences, in order to bring about a better understanding amongst fanciers and judges with regard to this general favourite.

The following description, then, is the result of our careful study.

Fantails, as all fanciers are aware, and as most of your readers will guess, take their name from the peculiar fan-like shape of their tails, and which is, of course, one of the most important points in the bird, and to which the fancier should direct special attention. But it must also be borne in mind that the Fantail possesses other peculiarities besides its conspicuous tail. It has an eccentric shaking motion of the neck, which has been thought much of by some fanciers—so much, indeed, that this characteristic was once sought for as an estimable point, and in preference to a large and expansive fan. By such admirers they were called "Broad-tailed Shakers."

There have been many strange tales told about this kind of bird which we pass over without notice, but two of the most remarkable we think it well to refer to, as they proceed from eminent naturalists, and may mislead those who seek instruction from such writers. From one of the abovenamed sources we learn that "The Fantail is capable of expanding and closing its tail like," says one, "the Turkey," and another "the Peacock." But this notion must be imaginary; it is contrary to fact, for the Fantail does not even possess the same power over its tail as do the other varieties, for the Fantail cannot close its tail, but can only control the membrane upon which the feathers grow in an upward, downward, and sideway motion, which does not influence the spread of the fan in any way.

Another peculiarity noticeable in this variety is, that in its shaking motion it stands upon its toes, and by its backward jerking also a person unaccustomed to them might suppose it would topple over backward; but as a rule, notwithstanding the extent to which the birds throw back their heads, they should be able to maintain their equilibrium gracefully, and carry erect and at ease the expansive fans with which they are adorned, and by which they are partially overshadowed.

Fantails are, generally speaking, of a strong and vigorous

constitution, requiring but little care in their management beyond providing a suitable pen for keeping them dry and clean, and then, with ordinary attention, they will thrive and prove prolific birds, and good also to rear their young. Plenty of space should always be given, and all nooks and corners avoided, lest they should crush, break, fringe, or wholly destroy their tails. Brick nests on the floor have been found most suitable for these birds. They seldom fly much and cannot fly long; and whatever may have been said about their aërial rudder, powers of locomotion, or high flying under exceptional circumstances, we know well from experience that good Fantails cannot and will not fly much, but that they are the tamest and perhaps the most tractable of all Pigeons.

At present the recognised varieties of Fantails are *White*, *Blue*, *Silver*, *Black*, *Red*, and *Yellow*. Splashed and Saddle-backed ones are numerous, but are only looked upon as mongrels. It is a rare occurrence to find two of these latter kinds alike. There are also *Frizzled* and *Silky* Fantails. White Fantails are by far the most numerous, and amongst them are unquestionably to be found the best specimens.

The *general properties* or qualities of the Fantail are briefly summed up as follows, which, with the aid of our engraving, we hope will be sufficiently clear to elucidate our views. The *head* of the Fantail should be plain—capped ones were once numerous, but are now almost disregarded. The head partakes somewhat of the ordinary elongated shape of the common Dove Pigeon, but with a sudden rise from its small wart or nostril covers to the top of its head, and then as sudden a recedence to its *neck*, which should be slender and of a nice symmetrical curve. The *breast* must be very prominent; the *shoulders* or wing-butte generally hidden from view; the *wings* should suddenly slope from their sockets, and just meet at their tips behind the bird, and trailing, or nearly so, upon the ground; the *back* is very short, as a result of the neck and base of the tail coming in contact; the *tail* should be large and wide-spread, in form three-fourths of a circle, and possessed of three rows of broad feathers, about forty-two in number. The bird must not throw backward its head so as to protrude behind, and thus divide its tail. To fanciers more accustomed to other varieties forty-two feathers for a tail may seem a great many, and so, indeed, they are; but we have known a Fantail to have forty-eight tail feathers, but we prefer a bird possessing qualifications even in a less degree, but in all its integral parts, rather than having solely a preponderating number of tail feathers at the sure sacrifice of an erect carriage, without which many essential and minor points are entirely lost. Our engraving shows the desired combination.

The tail should not only be of a three-fourths circular form, but should slightly incline over the back, but not be aside, nor should it too much overhang, otherwise by its weight the bird's wings are uplifted, the body hanging forward, and the general appearance spoilt.

The *eye* of the White Fantail is dark hazel; the *legs* rather short; the *beak* and *nails* pinkish white; *legs* and *feet* coral red.

To admirers of the expansive, many, and broad-feathered "fan" at any cost, we would again observe that such a point is very desirable, but in our admiration of such a good point we must not forget the proud tip-toe strut, the graceful carriage, and nervous shake, so characteristic of a good Fantail, and without which the largest "fan" cannot be effectively displayed. We have had under our notice too many distorted specimens—toppling forward, and crouching beneath the weight of their bulky tails, their breasts in close proximity to the ground, their pinions crossed and pointing skyward—to adopt such point only as our standard. We should endeavour, as far as possible, to obtain the embodiment of all the essential qualities, of which good carriage plays so important a part; it is the means by which other good qualities are exhibited to advantage.

Blue Fantails are far less numerous than the White, and, as a rule, cannot be procured of such quality. The majority of Blues are of a dingy hue, but there are now many excellent Blue Fans of a good clear colour. Blue Fantails should be of a good, bright, uniform colour, the head and neck feathers of a little darker tint. Across the upper coverts (as in Blue Pigeons generally) there are two black bars; a rim of black is also upon the tail near to its extremity. The *eye* of the Blues must be pearl, the *beak* and *nails* dark.

Black Fantails should be of one uniform tone, and as near as possible jet black; but as yet this desirable object is only occasionally attained. They are much too frequently produced of a bluish black, with oftentimes a faint indication of a bar, which is objectionable, and conclusively shows a cross with a coloured specimen, and however desirable such cross may be to perfect other points, *colour* must assuredly suffer.

The *general properties* of Blues, Silvers, Blacks, Yellows, Reds, Frizzled, and Laced Fantails are much alike; indeed, they should all answer the one general description. Colour of *eye* and *feathering* in each of the *five first named* constitute the differences, and denote the variety to which the birds belong. Red and Yellow Fantails are very scarce. They should be of one even colour, or "self-coloured," and must be free from the slaty grey too frequently visible upon most varieties termed self-coloured. They are held of little value unless they are pure and uniform in colour throughout their feathering. The Reds and Yellows, also, seldom have such expansive tails or such broad feathers as the other kinds; their tails are more frequently of the tundish or shuttlecock shape, and in consequence are not so attractive as the Whites and Blues, but still they command attention from their novel appearance. Silvers are much like the Blues, presenting the appearance of a nearly-washed-out blue, save the bar and lower portion of hackle, which is dark—nearly black.

The *eyes* of the Blues, Silvers, Blacks, Yellows, and Reds should be of a pearlish colour. Good yellow-eyed birds are numerous in each variety (save Whites), but pearl eyes for Blues, Blacks, and Silvers should always be preferred. Of Yellows and Reds we are not so particular, but would prefer *pearl*.

Frizzled Fantails are scarce. They may be described as White Fans with their feathers turned upside down. *Silky* Fantails also present a singular appearance. They much resemble an ordinary specimen partially dried after a bath, but yet have, as their name denotes, a nice silky appearance. Good specimens are of a darkish tint on the eye, wattle, and nostril.

These two last-named varieties are extraordinary-looking birds, command a high price, and attract great attention at our public exhibitions from their very singular and rare appearance. —Birmingham Columbarian Society.

RABBITS AT THE COMING COLCHESTER AND PORTSMOUTH SHOWS.

One of the most pleasing features of the Colchester Show to me, being a Rabbit-fancier, is the sum of £12, offered for the four classes of Rabbits, being the largest amount ever yet given. I am glad to see that the claims of the Variety classes to be placed on an equal footing with the Lops have not been overlooked, the handsome prizes of 40*s.* and 20*s.* being allotted to all the classes. The Rabbits are to be penned singly. The entries are only 2*s.* 6*d.* per pen. I shall enter as many as possible. I have also before me the prize list of the coming Portsmouth Show. Supported as it is by so many of the nobility and gentry of the neighbourhood, and above all patronised by the fair sex, I cannot congratulate the Committee so warmly as I have done that of the Colchester Show. Five classes of Lops are to receive 15*s.* and 5*s.* There is only one class for Any variety, and one prize of 10*s.* The entrance fee in all cases being 2*s.* 6*d.* per pen contrasts very unfavourably with Colchester. It cannot be just to award ten prizes to Lops and only one inferior prize to the Variety classes, and still charge the same entrance fee.—S. G. Hudson, *Hull*.

Torquay Poultry Show. — The prizes offered are very liberal; there are three unusually valuable silver cups, and four prizes in each class, varying from £4 to 10*s.*, and for Pigeons £2 and £1.

OUR LETTER BOX.

Plymouth Show (*An Exhibitor*). — The subject, we think, needs no further comment. Reports are not usually subjects for criticism.

Breeding Golden-pencilled Hamburghs (*O. P. Q.*).—No one is so well able as yourself to judge of the birds you should mate. We can only answer for age, and we advise you to put a cockerel and a hen together, taking care that the last possesses all the points you require, and that the first has no real defect. The grizzled tail is a great defect, and the pencillings should not go round the feather—that has a tendency to produce mossy plumage. With such a hen you should put a scrupulously correct cock.

Unfertile Eggs (*Poussin*).—The result you complain of is not uncommon so early in the season and during very inclement weather. We should set her next eggs with confidence. Frost causes the yolk and white of the egg to mingle. When one becomes rotten life has to an extent been developed and afterwards allowed to perish; hence corruption. Those you found unturned and totally unchanged are termed "clear eggs," and are such as are produced where hens and pullets only are kept. Such eggs are frequently met with in the winter. Temperature has much to do with it. It will not occur again.

Fowls under Trees (*H. K.*).—We fear the confinement has done the mischief. There is nothing in their run to cause it, but if there be a time of year when it is likely to be unhealthy it is now. Snow is always trying, and rain with cold winds causes colds. Catch all that are running at the nostril and confine them. Let only the healthy keep about. If all

your birds are sick kill the worst, try to heal the others; if you succeed get some early eggs of a pure breed, hatch them and rear the chickens. In the warm, dry, summer weather no place is better for them than a copse. Of course your birds have a dry roosting place, and have access to dust and light soil. You must also recollect they want very good feeding at this time of year, the earth yields nothing now. If you care only for eggs keep the mongrels, some of them will get well; but if you care for poultry, keep only enough of them to hatch some pure chickens.

Change of Stock Birds (*Brahma*).—If the cock were changed now we think you may safely depend on his successor being the father of the chickens.

Turkey for Table (*Arthenice*).—Why do you not fatten the bird with the injured eye, and keep the younger for laying? Are you sure it was done by fighting. It may be cold and incipient roup—*raison de plus* for killing her. Her state of health offers no impediment. The young one will be quite old enough to breed from. She will not lay till the end of March.

Spanish Cock's Comb Drooping (*Young Henwife*).—The comb falls from want of condition, or from over-condition, or from hereditary defect. If from the first cause, improved health will perhaps rectify the defect; if from the second, it will not. If from the third, only one treatment is possible—that is, to fasten the comb with silver wire in the position in which it is desired to place it.

Brahma Cockerel Vulture-hocked (*C. W.*).—We consider a vulture-hocked Brahma worthless as a breeding bird, if anything more than an ordinary fowl is required. We kill numbers every year, and sell others at nominal prices only, because they have that fault. A vulture-hocked Brahma has no pretensien to be a prize bird, nor should it be sold as such.

Game Bantam Breeding (*Sworrabs*).—Few persons breed or keep the Black Game Bantams. They were never numerous, and are, we think, as much kept as ever. Their larger brethren, the Black Game fowls, are very little kept or shown. We do not believe it is well for any birds to breed in-and-in. You ask why? Because it is neither good for shape nor constitution. It is destructive of strength, and produces deformity. Game Bantams should not be short-legged, neither should they be stilty. A short-legged Game fowl is an abomination, and a long-legged one a lamplighter. Choose the happy medium.

Spanish Cock's Comb Black (*Berkhampstead Subscriber*).—It is more than probable the Spanish cock's comb is frosted. Rub it night and morning, but especially at night, with strong camphor ointment. The Dorking hen has left off laying because the weather is so cold. We have never been led to believe a Spanish cock is "difficile" in his choice of "compagnes." Powdered chalk is an excellent thing to mix with poultry food.

Roughness in Hens' Legs (*A M'D.*).—Rubbing in sulphur ointment often removes it.

Stewarton Hives (*Idem*).—In "Bee-keeping for the Many" is a description and directions for managing. You can have it free by post if you enclose five postage stamps with your direction.

Various (*Apicola*).—There seems to be no doubt that your stock has died of foul brood. The remaining honey should be drained and applied to any purpose except feeding bees, the combs melted down, and the hive itself, after its interior, the frames, floor-board, &c., have been well scraped, should be thoroughly washed both inside and out with a saturated solution of chloride of lime, and then left unused for a couple of seasons. If yours is a closed bee house the hives will require no further protection during winter. We cannot tell why the stock in your large hive is weaker than that in the smaller one. It may be owing, as you suggest, to the fault of the queen, or it may be due to incipient foul brood or some other cause, which can only be conjectured in the case of a hive with fixed combs, or determined with certainty by internal examination if it be a moveable-comb hive.

Song Thrush and Redwing (*T. H. T.*).—The specific characteristics of the Song Thrush (Turdus musicus) are upper parts yellowish-brown, the head tinged with red; secondary coverts and first row of small coverts tipped with reddish yellow; fore part of neck and breast yellowish, each feather terminated by a triangular brownish-black spot; lower wing-coverts reddish-yellow. Those of the Redwing (Turdus iliacus) are upper parts deep hair-brown, inclining to olive; a blackish-brown spot before the eye, a large whitish band over it; secondary coverts tipped with greyish-white; fore-part of neck and breast white, with longitudinal streaks of blackish-brown and pale brown; middle of the sides and lower wing-coverts light red. In the third volume of Macgillivray's "British Birds" there are full descriptions.

OUR METEOROLOGICAL REPORT.

In accordance with your request I have much pleasure in supplying the first of, I hope, a long series of brief weekly reports on the varying characteristics of our climate. In drawing up the table I have been guided by two leading desires—viz., to give those facts (1) which bear most closely on horticultural and agricultural pursuits, and (2) which will be most useful for comparison to my many friends among your readers.

Perhaps you will allow me to say a few words "for once and for all" respecting the data in the accompanying table; if in any respect I fail to make my meaning clear I will, with your permission, subsequently reply to any queries.

It will be seen that the table is divisible into two portions, the first giving absolute data for nine o'clock each morning, and the second giving the extreme temperatures and the total amount of rain.

The barometrical readings are, as all published readings should be, corrected for index error, reduced to 32°, and to what they would have been had the barometer been at the level of the sea. The use of barometric readings, especially in conjunction with the hygrometer, in indicating coming changes of weather, is too well known to require enforcement, and is of itself ample reason for the insertion of both barometric and hygrometric readings in a horticultural journal. But besides this, the humidity of the air as indicated by the difference between the dry and wet bulb thermometers, the direction of the wind, and the temperature of the soil, exert influences on plants which, carefully noted, would I am sure lead to useful results. Extremes of temperature are not less important, but shade temperatures alone are not sufficient: hence I have added the highest temperature registered by a vacuum black bulb thermometer, of which the bulb is 4 feet above the ground, and fully exposed to the sun; and also the lowest point reached by a very delicate spirit thermometer, which rests on grass. These two thermometers evidently give an approximation to the temperatures to which vegetation is exposed. Last, but not least, is the depth of rain collected by a rain gauge whose mouth is 6 inches above the surface of the ground.

As a good deal of confusion exists as to the date against which certain observations are to be entered, I may, in conclusion, state that, assuming that (as is far the best) observations are made at 9 A.M., it is obvious that nineteen times out of twenty the maximum temperature then read belongs to the previous day; it is therefore to be so entered. Again, the coldest time of the day is usually about an hour before sunrise, therefore the minimum read at 9 A.M. on any given day belongs to that day, and is so entered. Lastly, the rain measured at 9 A.M. was the product of the previous twenty-four hours, of which fifteen belong to the previous day, and only nine to that on which it is measured; therefore the rain, like the maximum temperatures, are always entered one day back—*e.g.*, 33.8, the maximum temperature of the 11th instant, was the reading of the instrument at 9 A.M. on the 12th.—G. J. Symons, 62, *Camden Square, N. W.*

METEOROLOGICAL OBSERVATIONS,
Camden, Square, London.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude 111 feet.

Date. 1871. Jan.	9 A.M. Barometer at 32° and Sea Level	9 A.M. Hygrometer. Dry.	9 A.M. Hygrometer. Wet.	9 A.M. Direction of Wind.	9 A.M. Temp. of Soil at 1 ft.	In the Day. Shade Temperature. Max.	In the Day. Shade Temperature. Min.	In the Day. Radiation Temperature In Sun.	In the Day. Radiation Temperature On Grass.	Rain.
	Inches	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
We. 11	29.793	31.5	30.8	N.E.	33.0	33.8	20.9	43.3	28.0	0.122
Th. 12	30.150	33.5	32.5	N.W.	33.2	35.3	29.7	62.2	25.5	—
Fri. 13	30.235	27.0	25.9	W.	32.8	37.5	19.7	40.5	24.6	0.035
Sat. 14	29.936	41.1	40.8	S.	32.9	44.3	25.9	69.2	26.5	—
Sun. 15	29.571	37.5	36.2	S.W.	33.4	44.8	36.5	69.0	33.8	0.135
Mo. 16	28.888	43.9	42.8	W.	34.8	45.0	35.5	59.9	32.3	0.351
Tu. 17	28.973	37.6	36.8	S.	34.7	40.6	35.3	58.0	31.6	0.365
Means	29.657	36.0	35.1	..	33.5	40.3	30.3	57.1	29.2	1.008

REMARKS.

11th.—Overcast in the morning, snow began at 10 A.M., and from 1 to 1.35 P.M. fell heavily, lying 1½ deep at the latter hour. In the evening, about 8 P.M., another heavy fall occurred, making the entire depth nearly 2 inches, but the snow was very light, and hence, as above noted, it only yielded about one-sixteenth its depth of water, instead of one-twelfth, the usual proportion.

12th.—Overcast in morning, fine evening; barometer 30.229 at 9 P.M.

13th.—Cold morning, roads very slippery; about 7 P.M. a slight fall of rain and sleet, with partial thaw.

14th.—Complete thaw, temperature 14° higher than yesterday at the same hour. Wind began to freshen soon after noon; squally at night.

15th.—Fine early, but wet and uncomfortable after 11 A.M., a little snow mixed with the rain at 3 P.M. Gale at night

16th.—Fair in morning, but heavy rain at intervals all day.

17th.—Heavy rain at 10 A.M., and snow at 11 A.M., wild afternoon, starlight in evening.

The most noticeable feature of the week is the fall of the barometer from 30.229 inch on the 12th, at 9 P.M., to 28.876 inch (1.353 inch) at 8.30 A.M., on the 16th, and its long continuance at very low readings, even at 9 P.M. on the 17th having only risen to 28.990 inch.—G. J. Symons.

COVENT GARDEN MARKET.—January 18.

Prices remain quite stationary, and business nearly so, the chief operations being confined to rough goods, which are tolerably plentiful considering the severity of the weather during the last month. Hothouse Grapes are somewhat in excess of the demand, and large quantities of inferior ones can barely find a market. Potato trade steady.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples ..... ½ sieve	1	0	to 2	0	Oranges ..... ℔ 100	6	0	to 10	0
Chestnuts ..... bushel	10	0	18	0	Pears, kitchen ..... doz.	1	0	2	0
Filberts ..... lb.	0	0	2	0	dessert ..... doz.	1	0	3	0
Cobs ..... lb.	2	0	2	6	Pine Apples ..... lb.	3	0	6	0
Grapes, Hothouse .... lb.	4	0	8	0	Plums ..... ½ sieve	1	6	3	0
Lemons ..... ℔ 100	8	0	10	0	Walnuts ..... bushel	10	0	16	0
Melons ..... each	1	0	4	0	do. ..... ℔ 100	1	0	2	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Asparagus ..... ℔ 100	7	0	to 10	0	Leeks ..... bunch	0	4	to 0	0
Beans, Kidney .... ℔ 100	2	0	3	0	Lettuce ..... doz.	1	0	2	0
Beet, Red ..... doz.	2	0	3	0	Mushrooms ..... pottle	1	0	2	6
Broccoli ..... bundle	0	9	1	6	Mustard & Cress .. punnet	0	2	0	0
Brussels Sprouts .. ½ sieve	2	0	3	0	Onions ..... bushel	3	0	5	0
Cabbage ..... doz.	1	0	2	0	Parsley ..... sieve	3	0	6	0
Carrots ..... bunch	0	4	0	8	Parsnips ..... doz.	0	9	1	0
Cauliflower ..... doz.	2	0	6	0	Potatoes ..... bushel	2	0	4	6
Celery ..... bundle	1	6	3	0	Kidney ..... do.	3	0	4	0
Coleworts .. doz. bunches	3	0	6	0	Radishes .. doz. bunches	0	6	1	0
Cucumbers ..... each	1	6	3	0	Savoys ..... doz.	1	6	2	0
Endive ..... doz.	2	0	0	0	Sea-kale ..... basket	2	0	2	0
Fennel ..... bunch	0	3	0	0	Shallots ..... lb.	0	6	0	6
Garlic ..... lb.	0	8	0	0	Spinach ..... bushel	2	0	2	6
Herbs ..... bunch	0	3	0	0	Tomatoes ..... doz.	3	0	0	0
Horseradish .... bundle	3	0	6	0	Turnips ..... bunch	0	6	0	0

WEEKLY CALENDAR.

Day of Month	Day of Week	JAN. 26—FEB. 1, 1871.	Average Temperature near London. Day.	Night.	Mean.	Rain in 43 years. Days.	Sun Rises. m. h.	Sun Sets. m. h.	Moon Rises. m. h.	Moon Sets. m. h.	Moon's Age. Days.	Clock before Sun. m. s.	Day of Year.
26	Th	Meeting of Royal Society, 8.30 P.M.	45.5	32.3	38.9	20	50 af 7	36 af 4	35 a 10	6af 11	5	12 47	26
27	F		44.6	31.2	37.9	20	49 7	38 4	52 10	morn.	6	12 59	27
28	S	Length of night 15h. 8m.	45.8	30.8	38.3	21	48 7	40 4	10 11	13 0	☽	13 11	28
29	Sun	4 Sunday after Epiphany.	45.6	31.5	38.5	18	46 7	42 4	31 11	20 1	8	13 22	29
30	M		44.7	32.2	38.5	22	45 7	44 4	53 11	26 2	9	13 32	30
31	Tu	Hilary Term ends.	44.9	30.9	37.9	20	43 7	46 4	after.	31 3	10	13 41	31
1	W	Meeting of Society of Arts, 8 P.M.	44.4	32.0	38.2	14	41 7	48 4	56 0	34 4	11	13 50	32

From observations taken near London during forty-three years, the average day temperatnre of the week is 45.1°, and its night temperature 31.5°. The greatest heat was 57°, on the 29th, 1863; and the lowest cold 8°, on the 30th, 1857. The greatast fall of rain was 0.70 inch.

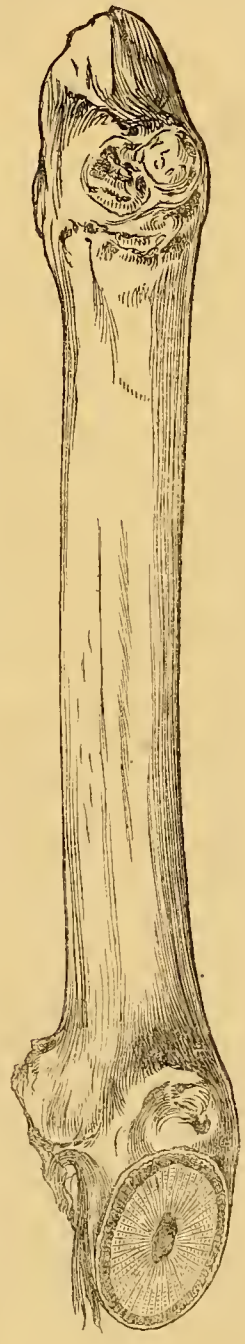
A NEW METHOD OF GROWING YOUNG VINES.

I HAVE for some time felt that our present method of preparing young Vines, especially for planting, is far from satisfactory, and that its imperfection is one of the causes that lead to the sudden decline in fruitfulness so often complained of in the case of the Vine. This being so, and having had to prepare about a thousand Vines for my own planting last spring, I adopted what is, as far as known to me, an entirely new method of growing them; this I will explain in as few words as possible, and those who wish further details will find them in the seventh edition of my little book on the Vine; these, for gardeners at least, will be unnecessary, and amateurs seldom raise Vines from eyes.

My objections to the usual system I had better state to begin with. The first is the rich soil used for growing the Vines. This gives rise to strong soft roots few in number, and which generally perish during the winter. The second is the coiling of the roots, first round the small pot, in which the eye is started, before it is shifted into a larger pot; then the same process continued in the larger pot; and lastly, when the Vine has to be turned out of the pot for planting, the extreme difficulty of distentangling the roots, in which process all the spongioles and small roots are destroyed, leaving a few long bare roots which have to be spread out in the border, reaching a long way across it, and from the points of which the newly-formed roots start, leaving a great part of the carefully-prepared border behind them.

To avoid such evils as I consider these are, I proceeded as follows:—On the pavement of what was intended for and is now a Pine stove, under which are hot-water pipes for giving bottom heat, I placed a complete covering of tough fibry turf taken off a sheep-walk; on this I placed 4 inches of fine fibry maiden loam. In this, at a distance of 6 inches or so from each other, holes an inch deep were made, and filled with white sand, and in the sand the Vine eyes were placed, and just covered with it. The bottom heat did not exceed 60°.

The Vine eyes started in the usual way, and out of sixteen hundred not six failed to make rapid progress. When they were about 9 inches high, with four or five fully-developed leaves, and their first set of strong quill-like roots beginning to interlace each other, I had each plant cut round with a knife, so that it rested on its own isolated bit of turf, and had the points of its roots cut off. They flagged a little for a few days, but soon began to grow again, and I had each plant raised on a square trowel, and transplanted to a similar bed of turf and fibrous loam, but this time they were placed from 9 to 12 inches apart, according to their strength, filling in all round with loam in which there was no manure of any kind. When raised on the trowel, the edges of the square of soil they were growing in was a mass of fine white needle-like roots springing from the large roots that were cut across. The



Vines seemed to suffer no check from their removal, but grew rapidly.

When the Vines were about 3 feet high, and just a week before I meant to plant them in the borders, I had them cut round again, but this time the blocks of loam in which they were growing were from 9 inches to a foot square, and 6 inches deep, and one mass of fine active roots more like those of a Box or Privet bush than of a Vine; they were moved entire to where they were planted with the greatest facility, not a root being injured.

The progress the Vines made after being planted in the borders was, in my experience, altogether unparalleled. The eyes were put in the soil on the 7th of February last, and I send you samples of the wood cut exactly to a day eleven months from the time the eyes were put in the soil. They were chiefly Muscats, Lady Downe's (black and white), Gros Colman, Alicante, and—strongest of all—the Golden Champion. You will note how little pith there is in the wood.

About seven hundred of such Vines as I did not require for planting I had potted for either fruiting in pots or planting, and they have been equally successful; therefore I can recommend the system for either purpose. An examination of the border shows that the roots are retaining the habit thus forced upon them, and are, so to speak, taking their work before them.—W. Thomson, *Dalkeith Park*.

[We received three cuttings from Mr. Thomson, they were of Golden Champion, Lady Downe's, and Gros Colman. No better-ripened, shorter-jointed, smaller-pithed, finer young wood was ever produced on a Vine; and when it is remembered that no more than eleven months before the eyes producing that wood were planted, we believe that such success is without a pa-

rallel. We accompany this with a drawing of a section from the Golden Champion cutting, exactly of the size sent to us.—Eds.]

HOP CULTIVATION FOR ORNAMENT AND USE.

No. 1.

It is not without considerable diffidence that I address myself to a subject which to a certain extent may be thought a departure from the line laid down of treating in these pages only on matters of a purely horticultural nature; I likewise feel diffident in meddling with a subject of which the most experienced cultivators often admit they know but little; but I am emboldened by the fact that if the Hop plant and its culture were better known amongst gardeners it might be introduced more frequently in places where its beauties entitle it to a place. In stating this, I believe I am not using stronger language than will be borne out by all, or at all events nearly all, of those who have seen a plantation of Hops in good condition in August, and I call upon them to say whether they have ever met with anything in the whole vegetable world that exceeded it in grace and beauty. As there seems to be no reason why the beauties of the Hop should be confined to the districts where it is cultivated, it would be well if those having the means would try a plant or two on some suitable spot, and by careful attention to the plant, its beauties would in favourable years well reward the grower for his labour; whilst the interest with which it is regarded where it is not cultivated as a profitable crop also enhances its importance.

Although the cultivation of the Hop on a large scale is limited to a few favoured places, there is no doubt but the number of these might be multiplied, and suitable and sheltered sites in most gardens or grounds might be tried with a stool or two of this plant. I remember many years ago visiting a garden in North Cheshire where there were specimens of Hops in excellent condition, the gardener, I believe, being a Sussex man. I have also seen very fair specimens of Hops growing in a thicket in a situation far from favourable in Northumberland, and I also remember once noticing a Hop hill in the garden surrounding Stirling Castle, but the produce there, as might be expected, was small, the great elevation and want of shelter being felt by other things as well as the Hop, though I have seen fair examples of Hops against the front of a public house in Yorkshire. The Hop, however, as an object of beauty and interest is far from being so widely scattered as it deserves to be, and I think it might often be employed as a summer climber to cover arbours and similar places, and with as good results as other plants used for the purpose, whilst in favourable seasons it would possess an interest which none of the usual plants would have.

The Hop is often met with in Kent in a wild state, but it is not generally regarded as a native plant, for it is supposed to have been introduced from the Netherlands about three hundred years ago. The mode by which our forefathers preserved their beer previous to that time seems not to have been transmitted to us; perhaps it was a secret they did not wish to be too widely known, like that of making beer from the wild Heath, which tradition says the Picts had the means of doing, but the secret died with them. Be this as it may, there is no difference of opinion at the present day as to Hops being an essential component in the manufacture of beer, and whatever else has been used as a substitute for them has always been regarded by John Bull as an adulteration.

It is, I believe, generally admitted that about one-half of the Hops grown in the United Kingdom are produced in Kent, and that Kent and Sussex together produce fully three-fourths of the entire crop. Of those grown in Kent, the bulk comes from the centre and the southern edge of the county, the western, northern, and coast district producing but few. In the districts where Hops are cultivated the diversities of soil are, perhaps, as great as where any other crop is attempted to be grown, the soils varying from the stiff clayey loam of the Weald to the dry chalky downs of East Kent. Plantations of Hops are likewise to be met with on the dry stony soil overlying the limestone, or what is here called Kentish rag, as well as on some peaty marshes by the side of the Medway, where it is necessary to maintain open ditches 4 feet deep, and only 15 feet apart, all over the ground, the height above water mark not admitting of any other kind of drainage. Extraordinary crops are reported to be sometimes obtained from land of this description, but the quality is inferior, the variety grown not having the best name at market; in fact it may be said that the Hops of the best quality are invariably produced on dry land abounding in lime or some of its combinations. Some dry valleys between the chalky downs to the south of Canterbury produce excellent samples, although not better than are often met with from the ragstone slopes facing the Medway. The greater part of the course of that river from Tunbridge to Maidstone is through a district rich in Hop gardens, some parishes presenting as great an area under Hops and fruit together as under all other agricultural crops; and as the ground devoted to the former two is all cultivated by hand, it need hardly be said that a farm or holding of fifty acres gives employment to a greater number of hands than are often met with elsewhere on a farm of many times that extent. The gathering-in of the crop alone gives employment to a greater number of persons than any agricultural crop that I am aware of. Some growers during the past season expended from £15 to £20 per acre in securing their crop. The anxiety with which the crop is watched may therefore be readily conceived, especially when the reader is told how exceedingly precarious it is—so much so, in fact, that it is not unusual for the grower to do the best he can and not realise a single shilling, and that may even be several times repeated; on the other hand there have been now and then instances where a crop of Hops has realised more than would have bought the land twice over, valuable as it often is.

So capricious is the Hop plant that, as mentioned at the beginning of this article, it is not unusual to meet with old cultivators, men who have made the plant their study through life, admit themselves puzzled and fairly beaten when their efforts to avert failure are of no avail; and on the other hand occasionally a recovery will take place in plants that seemed in a hopeless state of disease, and a fair average crop will be produced. These peculiarities in the Hop have no parallel, so far as I am aware, among other crops, the energies of the cultivator being almost as powerless to control the plant's going downhill as they are to stop the Potato disease. At the same time he seldom or never gives up in despair, the Hop-grower, in fact, being one of the most ardent of all cultivators, trying all manner of experiments, and examining his crop daily with a keener inspection than the plant-cultivator whose pets are in preparation for some show, for he will tell you to-day whether his prospects are better or worse than they were yesterday. He does this, not in the way of merely jumping at a conclusion, but as the result of the close inspection of a number of his plants, and he is generally right, though the superficial observer may call his conclusions the result of prejudice.

It is the uncertainty of success that has limited Hop-culture to certain localities, and it is doubtful whether science will ever be able to battle with this uncertainty. Much has certainly been done of late years in freeing the cultivation of the plant from some vexatious restrictions put upon it by those who buy the produce. Still Hops are a capricious crop; and though the past season has been favourable, the preceding three years were indifferent, although the skill and attention exercised were the same in all. The united crop of the three years referred to in many instances did not exceed that of 1870 alone, and there are often enough greater differences than this. Besides, the quantity of Hops really wanted is not very large, and as they deteriorate very much by being kept over a year, the anxiety to sell within a given period has, with other causes too complicated to be mentioned here, placed the Hop market in a condition more fettered and hampered by restrictions than that of anything else I know. Even the removal of the excise duty has not set the planter so free as he ought to be, but time will doubtless effect a reform in an abuse which legislative enactments are powerless in.—John Robson.

DOUBLE-FLOWERED PELARGONIUMS AS BEDDERS.

Not having a sufficient number of one sort of the above class of Pelargoniums to fill a bed last summer, our beds being large, I did not attempt planting any of them out. I have heard poor accounts of their success out of doors, the common complaint being their too vigorous habit, but there cannot be two opinions as to their suitability as pot plants. They are vigorous in pots, but not too much so when properly managed. I grew a large number last summer for the decoration of our conservatory, and those who saw them can testify they were good. They were—Andrew Henderson, one of the best of the

double-flowering varieties, its habit and growth being dwarf and compact; colour clear scarlet lake. The trusses are of extraordinary size, and the individual flowers are very full and double. I have seen nothing of its colour equal to this. Emile Lemoine, extraordinarily large trusses of large and very double flowers; colour carmine changing to scarlet. It is of medium growth, throwing its trusses well above the foliage. I should say it will make a good bedder. Gloire de Nancy, much in the way of Andrew Henderson, but not nearly so good; flowers rich rosy scarlet, growth vigorous. Surpasse Gloire de Nancy and Ranunculiflora plenissima, not worth growing. Victor, a remarkably effective variety, the flowers being of a bright orange scarlet, striped and flaked with white. This is a splendid variety. Madame Lemoine, a shrubby-growing kind with the leaves conspicuously marked with a dark brown zone; a free bloomer. The trusses are immense, the flowers very double and perfectly formed, of a beautiful bright pink colour. This is, of its colour, one of the best double-flowering varieties ever sent out. Wilhelm Pfitzer, an extremely attractive and dazzling variety, producing immense trusses of large double flowers of an exceedingly rich carmine colour. Marie Lemoine, this variety is said to be the same in style as Madame Lemoine, but with the trusses larger, and the habit dwarf and compact. I have not had it long enough to prove it. The other varieties I have proved.

I have now a stock of Madame Lemoine which I purpose bedding out next summer. The number of cuttings required were potted-off in August; each cutting had a thumb-pot. After the cuttings were potted they were well watered, a place in the yard was covered with coal ashes which were made level and hard; on this the pots were placed, no frame or other protection being put over them. The cuttings soon took root, and when frost was expected they were removed to a Melon pit, where they have been kept ever since. I shall have them potted in March in large 48-sized pots; they will be taken into the Peach house to remain until the last week of April, they will then be placed in the yard for a fortnight, and finally removed to the flower garden, where they are to be plunged in the bed in which they are intended to remain for the summer. The pots should be plunged just deeply enough for the rims to be covered. Every plant must be carefully watered before plunging. I expect to restrict the vigour of the plants by the above mode of treatment.

The method is not a new one. About twelve years ago when I lived under Mr. James McIntosh, at Drumlanrig Gardens, plunging vigorous varieties of the single Pelargonium was there practised with good results—in fact, some of those plunged in the beds hardly made more than an inch of wood, and had very small leaves. If any of your readers have tried plunging the double-flowering varieties, I shall be glad to know the result.—C. M. M'Crow.

ICE versus GLASS.

Many of your correspondents like "R. F." (see page 49 of last week's Journal), have no doubt had their attention directed to this subject in a way that has been anything but agreeable during this severe weather. The breakage of glass has been in many places very great. Having suffered a good deal from this cause, perhaps a few of my deductions may be useful to others.

Some years since I drew the attention of your readers to the fact, that much of the glass used for horticultural buildings had never been properly annealed. This is a subject on which many persons have never thought; those who have, know that if glass is allowed to cool quickly after it is made, it is liable to break on very slight changes of temperature. I once heard and saw a large and expensive looking-glass crack across when no one was near it. Tumblers that have not been annealed properly will not bear hot water, and those who have seen Rupert's drops know that hot glass cooled very quickly cannot even be scratched without falling into fine powder. Having badly annealed glass, a person must expect that in time it will all crack. To deal with a respectable firm, and not to be too anxious for cheap glass, is the only way to guard against this worst cause of breakage. Mere thickness is no safeguard, heavy glass if unannealed will break quite as soon as thin. It is very bad economy to use glass however good too thin. I shall never again order glass under 21 ozs. to the foot, it is much cheaper in the end than 15-oz. glass.

Then, again, glass is often used too wide, and in that case it is too weak to carry heavy snow or bear rough wind without breaking. Panes 15 inches wide are as wide as ever ought to be used, and I should prefer 14 inches. A wide lap is also one of the chief causes of breakage; so long as there is a lap it cannot be too narrow. A wide lap holds much moisture, and as ice occupies more space than water, such moisture when frozen must lift one pane up or press the other down, and in cold weather the glass will not bear this without breaking, even when good in quality. Some will say, "Why have any lap at all? Place the edges together merely, and if cut level they will keep out the water." My answer is, that in stormy weather a roof so glazed will admit water at every joint, as I have proved. Of course, a very flat roof is a cause of breakage, as more water is retained by the laps of the glass, and more snow accumulates on it. But I have proved that the greatest preventive to breakage by frost is to cut the glass to a slight curve instead of a straight edge. However slight the curve may be it causes all the rain to run down the middle of the pane, thus drawing it away from the putty—a most valuable effect; but in addition it prevents the moisture resting between the laps, because as it collects at the lowest part of the curve its weight overcomes the capillary attraction of the lap, and it runs off, or rather down. In my new houses in which I have adopted this plan, there is not one pane cracked with frost to twenty in those where the straight-cut glass has been used. Now, this great improvement costs little to carry out, next to nothing in fact. The curve being very slight, it is little more than removing the corners of the panes. The trouble to the glazier is nothing, because it is only cutting to a slightly rounded edge in place of a straight one. In addition to these advantages a house so glazed has a much better appearance than one glazed in the ordinary manner.—J. R. Pearson, *Chilwell.*

SETTING OF GRAPES.

After reading Mr. Pearson's excellent and useful article under the above heading (see vol. xix., page 509), I came to the conclusion that it might be of benefit to the amateur at least to know a little about the setting of the Grapes referred to by me on the previous page.

Taking them as there described, Grizzly Frontignan is the first, and requires no attention beyond a gentle shake when the flowers expand, and the same remark holds good as regards Royal Muscadine, Buckland Sweetwater, and Foster's White Seedling, Black Hamburgh and Frankenthal I never set artificially, as I find no need for it. Mill Hill Hamburgh with me was a bad setter, and shanked as well. In the late house, which receives little heat, I find no difficulty with Trentham Black and West's St. Peter's; but Lady Downe's, Alicante, and Barbarossa [Gros Guillaume] require a brush to be run over them, and should also be planted at the warm end.

My treatment of Vines when in flower is very simple, though I do not affirm it would do for Vines in flower now or earlier, but those flowering, say in March, have the benefit of more light and sun than those flowering earlier. When I see the Vines are about opening the flowers I cease syringing overhead, but maintain a moist atmosphere by keeping the troughs full of water, and by damping and syringing the floors and walls, for I do not consider anything is gained by keeping a dry atmosphere. Should the weather be unfavourable or unsettled I use a little extra fire, so that I may give more air at the back and a little in front, taking every advantage of sunshine to admit more air. I also leave a little air at night at the back. Where bees are kept every means should be taken to entice them into the vineries. I have frequently carried in both bees and blue-bottle flies, and shut them up for a few hours; the flies, though not extracting the honey, must do much good by disturbing the foliage. Should there be any cutting or searching winds at the time the Vines are in flower, it is better to dispense with the front air. With me the setting of the above Grapes is an easy matter, and they are very suitable to those who require quality rather than quantity and size, and especially to the amateur.

After reading Mr. Pearson's notes, I wish I had room for Mrs. Pince and Muscat Hamburgh, though I am afraid they would require more heat than I should care to give. I should like to hear how Golden Champion succeeds in Lancashire; I intended having a Vine of it in the summer, but was dissuaded, being told it was a bad setter—in fact, partaking, as Mr. Pearson says, of the Canon Hall Muscat. I have not seen it in fruit myself.

I have endeavoured to show the treatment of my Vines when

in flower in a few short lines, and in summing up the points to be observed, I put down the following:—1st, Withhold water from the top when in flower. 2nd, Maintain a moist atmosphere, though the degree of moisture will be regulated by the weather outside, as it is not good policy to keep the house so damp in wet as in fine weather. 3rd, Keep up a regular temperature, which should be 5° higher during setting. 4th, Give air back and front as weather permits, shaking the Vines gently from time to time.—Stephen Castle, *Bent Hill Gardens, Prestwich.*

EARLY AND SECOND-EARLY POTATOES FOR LIGHT AND HEAVY SOILS.

"Novice," I will presume, wishes for information having regard to production for market purposes; then there cannot remain a doubt about the Early American Rose being the "heaviest cropping" early; and the Early Goodrich (an American white and rather coarse-looking sort) as a second early would beat Paterson's Victoria in that respect both upon light and heavy soils; only when they are grown on the flat on the latter description of soils they will scarcely do to present upon the dinner table. Give them light soil, or plough and plant them upon the ridge system on heavy soil, and then he will get bountiful and very eatable crops, which few, except connoisseurs of Potatoes, would find fault with.

Paterson's Victoria is a better kind than either of the above to grow upon light and heavy soils, but it does not come in so early. In regard also to "heavy cropping," your correspondent has done right to procure Sutton's Red-skinned Flourball as a late sort, but he will do quite wrong to grow it upon the flat in the generally heavy soils of his neighbourhood, which I know quite well. It has the faults of the American kinds so grown in England—namely, a soddened look and a flavourless quality, which the best of cooking cannot rectify; but when grown on a light soil, or upon the ridge, it will produce a great bulk of large, white-fleshed, floury-looking Potatoes, which, as I said before, will satisfy most people, but which a Paterson's Victoria would distance for flavour. Rintoul's New Early White Don, as a heavy-cropping, good-flavoured second-early, would be well worth the attention of "Novice," and I do not think he need care to trouble himself with more sorts than those enumerated.

Messrs. Sutton sent me other American sorts, &c., which I proved on different descriptions of soils, but the Early Rose, the Early Goodrich, and the Red-skinned Flourball were the cream of the lot.

"Novice" also requests you to send him any "works" you have on Potatoes. Allow me to propose that you should send him nearly a quarter of a century's Journal of Horticulture with the index complete. He will there be enabled to learn a good deal more, I fancy, about Potatoes and their cultivation than any "works" at present extant would be likely to teach him. At page 55, in my answer to "R. S.," I have been made to blow both hot and cold at the same breath; drop the first, third, and fifth n's of the first sentence, and then the reading will prove correct.—Robert Fenn.

VIOLA CORNUTA ALBA.

I do not think this valuable little bedder has been brought under the notice of your readers; I consider it one of the best of the bedding plants which have been introduced during the last two or three years, especially as we are so short of such plants having white flowers. Where I am, it is a difficult matter to get the Madame Vaucher section of Geraniums to bloom freely enough to make a good display; and notwithstanding all precautions, as mixing plenty of soot with the soil, strewing soot over it, dusting with sulphur, top-dressing, giving plenty of water, &c., we can only obtain a week's or a fortnight's bloom from the white Verbenas before they are smothered with mildew. Oh for a white Verbena with the habit and the free blooming of Purple King and its twin brother Crimson King! I had beds of these two that were splendid, and I only wanted a white variety of the same habit to accompany them. Cannot Mr. Perry or Mr. Eckford raise us one?

The white Viola admirably fills up the wide gap in unfavourable situations. I had four small circular beds of it, with Coleus Verschaffelti in their centres, and they were pronounced charming by all who saw them. I shall hold this to be my best white bedder until I get some of the white-flowering variegated Geraniums. I think this Viola is best raised from seed every spring, as plants from seed grow much stronger, come into bloom later, and continue longer in flower than those raised from cuttings. I find the beauty of the plants propagated in the latter way is over before the other bedders are at perfection. I found last year that many of the old plants and those from cuttings died off. I should like to know if this was general.—J. T., *Maesgwynne, South Wales.*

INSIDE PARIS.

It will interest many of our readers to know that Dr. Hogg has received by balloon post, from Paris, a letter dated January 7th, from M. Henry Vilmorin, a name widely known and much honoured in the world of horticulture. M. Vilmorin says—"We were leading a happy contented life when all was suddenly disturbed, our household broken up, my wife sent far south, my brothers called to arms, and I remained here alone. I cannot give myself as an instance of peculiar misery, yet see what has fallen to my share. I had to leave Verrières, leaving all my usual work incomplete, many things were lost of course, and studies were broken, making much work already done useless. Several most important collections of ours will be more or less completely lost. Now the Prussians are at Verrières, but we hear that the place is turned into a military hospital and not much damaged. Les Barres also has been occupied, and perhaps is still so.

"My wife left early in September, and went with our little daughter Elizabeth, to Dax. Maurice joined in August the 6th Battalion of Garde Mobile de Seine et Oise, to which he belonged, although never before drilled, or even armed. Philippe had to go to Cherbourg in the beginning of September to enter the corps of Marines. I have heard only once from my wife since she left, she was well and baby, and so was Philippe, but we were not told where he was. As a married man, I am only in the Garde Nationale, and being mounted act as *estafette*. We seldom ride out of Paris. Our service is very safe, and sometimes very interesting; we like it and find that the hardest thing is to get food for our horses. It is very unpleasant also to be stormed at with shot and shell in our houses, as is the case now. I sincerely hope that no wider difficulties will arise out of the present unhappy war, and that your country will be able to settle peaceably all the impending questions at the Conference."

MONPLAISIR AND OTHER TEA ROSES.

Your correspondent on Tea Rose culture (page 43) wishes to know something about Monplaisir; he complains of its shyness, and raggedness when open. When this Rose was introduced I planted it as I plant the rest of my Tea Roses—that is, in a bed fully exposed to the sun, but well sheltered from all winds, and I had then the same complaints to find as your correspondent. I could not get it to open in the house nor out of doors; it certainly was of better shape outside than under glass. The following year I potted early a large plant in a pot that would only just hold the roots, with plenty of drainage; and a month before I turned my bedding plants out I plunged Rose and pot where it was to stand, with, I am glad to say, much better success. I do not think I had more bloom, but what I had opened well, and when that is the case you see a magnificent Rose both in form and colour. Monplaisir is a seedling from Gloire de Dijon, but how fertilised I do not know; the growth is very vigorous, and so pleased am I with it, that I intend planting six more. Evidently it does well if the roots are pot-bound, and from my experience I advise your correspondent to try my plan.

I do not agree with your correspondent in planting his Tea Roses facing the east; my estimate of these Roses is to give them a fully-exposed open situation, away from winds, and in the very hottest and driest time of the summer to give plenty of water, and occasionally liquid manure. It is also a good plan after planting to cover the beds or borders with very rotten dung to the depth of 4 inches.—Rosa odorata.

SPAWN OF MUSHROOM BED ECCENTRIC.

Upon looking through my Mushroom house this morning, I find that the bed which was made about five weeks ago is almost entirely covered with spawn in the shape of white "thread-like" mould. In some parts where the lumps of

spawn were deposited, thousands of little Mushrooms the size of pin heads are pushing themselves up one above another. I have grown Mushrooms for years, but never before saw such masses together. My question is, Would it be advisable for me to put more soil on the bed, or will the Mushrooms now pushing up come to maturity without further aid? My house is about 9 feet wide, lean-to, walk 2 feet wide down the centre, beds each side 3 feet 3 inches wide by 1 foot 4 inches deep. A flow and return pipe runs round the house, inside, at a distance of about 2 feet 6 inches from the bottom of the bed. The beds were made of two-thirds good horse droppings, and one-third maiden soil, well mixed. I spawned in pieces 4 inches apart. —D. W., *Sheffield.*

[In such a case the fresh moulding would not be advisable. We would take a clean hard hair broom, leave the knots of young Mushrooms you allude to, and sweep off clean all the spreading spawn besides on the surface of the bed. Most likely the bed will then produce. We have had several such instances, and adopted the treatment stated.—Eds.]

SELECTIONS OF GRAPES.—No. 2.

Vines in Heated Houses.—These houses may be of several descriptions—viz., 1, Greenhouses and other structures used for plant-growing and storing plants in winter, the borders being, as a rule, wholly outside. 2, Vineries used as store-houses for plants in winter and for growing them in summer, but with the borders inside as well as outside, the Vines being planted inside. 3, Vineries proper, by which I mean that Grapes are treated as the sole object, or, if other subjects are introduced, these are such as will not interfere with good Grape-cultivation.

1. *Greenhouses or Houses Employed for Plant Culture Winter and Summer.*—These have the borders outside, and generally are only suitable for the hardiest sorts and such as may be termed summer varieties, for, from the moisture caused by the plants and the borders being outside, the late-hanging kinds cannot be preserved from premature decay. *White Grapes.*—Chasselas Vibert, berries round, large; strong grower, and free-bearing. Foster's White Seedling, berries roundish-oval and of good size. Buckland Sweetwater, berries round, large; great bearer. General della Marmora, berries large, round; great bearer. *Black Grapes.*—Frankenthal, berries roundish-oval, bunches and berries large. Black Prince, berries oval, long bunches. Black Champion, berries roundish-oval, long bunches; it is earlier than the Frankenthal by about a fortnight. Trentham Black, berries large, oval. Black Hamburgh, berries roundish-oval; free-bearing.

The above are the kinds I have found succeeding best in entirely outside borders and in houses devoted to plant-culture, but with Vines for shade and utility. Of course there are many other kinds that succeed tolerably well in outside borders, but from their liability to spotting and shanking I think it best to omit them. I am aware that not very long ago outside borders were the rule, but now they are the exception. No one will advocate outside planting. It may sometimes be a necessity, but in no case is it advisable. Good Grapes were grown with Vine roots in outside borders; now we have a better order of things, and if no finer Grapes are grown we know they are obtained with greater regularity and certainty.

2. *Vineries used as plant houses*, but with borders partly inside as well as outside, the Vines planted inside. It is almost unnecessary to say that all the varieties named for outside-border-planting will answer admirably, and are what I advise for planting a house intended to afford Grapes in July, the Vines being started early in February; and to those named I would add—White Frontignan, berries round, medium-sized, with the full Frontignan flavour; free bearer. Muscat Hamburgh, berries oval, black, with Muscat flavour. Bowood Muscat, berries large, oval. The last two do fairly in the same house with Hamburghs and succeed them, but are best in a house by themselves along with other kinds requiring a higher temperature; therefore for a supply in August, September, and onwards, if there is a house for an earlier crop, the following are excellent—viz., Muscat of Alexandria, berries oval, well known; Bowood Muscat; and White Tokay, berries large, oval. These are white Grapes. Black kinds are Black Muscat of Alexandria (Muscat Hamburgh); Mrs. Pince, berries oval, a fine late kind, but good in September or when ripe; Black Alicante, berries roundish-oval, bunches large; Lady Downe's, berries oval, large; West's St. Peter's, berries large, roundish-oval; Mill Hill Hamburgh, berries round, large. The foregoing even with plants, keep until the New Year, the best two for hanging being Lady Downe's and Mrs. Pince.

Although plants may be grown in a vinery, there are times when it would be better both for the plants and Vines if the former were removed; indeed it is hardly possible to ripen Grapes perfectly without a dryness of atmosphere which is unfavourable to plant culture. Therefore, as soon as the Grapes change colour remove all plants in active growth, but such subjects as Gloxinias and Achimenes, which need heat with a drier atmosphere for ripening the growths, may remain with advantage. I find no place so good as a vinery in which Grapes are ripening in July and August, for ripening off Amaryllids; and these do not interfere with the ripening of the Grapes, for they need no water, or but little. It is also the best place for ripening the growths of winter-flowering Begonias. The moisture necessary for plant-culture is not only detrimental to the ripening of the Grapes, but also injuriously affects their keeping and the ripening of the wood. If the wood were properly ripened we should hear less of the bunches curling up like tendrils and of bad-setting kinds needing artificial aid. As a rule, there are but few evils to which the Vine is subject that do not originate from the immature growths of the previous year.

3. *Vineries.*—In these the borders are inside and outside the house, the Vines being planted inside. The varieties may be divided into three sections—viz., Early, Midseason, and Late.

Early varieties, or those which bear forcing well, and can be depended on to give Grapes of fine quality by forcing from March to July inclusive, are the following:—Buckland Sweetwater; Foster's White Seedling; Trovéren Frontignan, berries roundish-oval, large bunches; White Frontignan, which ripens in the same house a fortnight before Buckland Sweetwater, but is not so fine a Grape as the Trovéren, which is, undoubtedly, the finest of all the Frontignans; Golden Hamburgh, berries roundish-oval, large; Golden Champion, very large bunches and berries, and as free-bearing as the Black Hamburgh; Black Champion; Black Hamburgh; Frankenthal (Pope's, or Victoria Hamburgh); Duc de Magenta, berries oval, large bunches; Royal Ascot, berries oval, bunches not large, but very free-bearing. All these force well. I have omitted the Royal Muscadine, as I consider it superseded by Foster's White Seedling. For the successful forcing of Grapes I consider it well to have heated borders, especially if part of these are outside. For very early forcing, and where there are no heated borders, have the Vines in pots. Those which answer well for early forcing in pots are Buckland Sweetwater; Early Smyrna Frontignan, berries round, not large, but very early; White Frontignan; and Early White Malvasia, berries oval, but somewhat rounded, a great bearer. These are white Grapes. Of black kinds I would have Frankenthal, Black Hamburgh, Black Champion, Royal Ascot, and Duc de Magenta. It is desirable that pot Vines for early forcing should have the pots about three parts plunged in a bed of leaves or other fermenting material, but it will answer if the pots be set on hot-water pipes, though in a bed of fermenting materials the roots extend beyond the pots, and the produce is larger and finer.

Midseason Grapes, or those affording a supply from July to October, I would divide into three sections—viz., Muscats, Frontignans, and those having none of the Muscat or Frontignan flavour.

Muscats can hardly be produced in good condition before July. I would have Bowood Muscat, Muscat of Alexandria, Muscat Escholata, perhaps identical with Muscat of Alexandria, but if there is any difference, it is in the berries being more even-sized, and the bunches stouter; Tynningham Muscat in no way different from that excellent Grape the Bowood Muscat, but with berries larger than the Muscat of Alexandria, very often pear-shaped, and deeper in colour when fully ripe; Black Muscat of Alexandria (Muscat Hamburgh); Mrs. Pince; and Madresfield Court Muscat, berries, oval, large, jet black, with a splendid bloom. The last two are very valuable for hanging late, exquisite in flavour when fully ripe, and never finer (nor, indeed, are any of the Muscats) than they are in August and September.

Of Frontignans—Trovéren Frontignan, the finest of all. Duchess of Buccleuch, berries round, not large. White Frontignan. Chasselas Musqué, berries round, undoubtedly the richest-flavoured Grape in cultivation. It is liable to crack, but that may be obviated by grafting on the Grizzly Frontignan. Black Frontignan, berries round, small, bunches long and tapering. Purple Constantia, berries round, larger than Black Frontignan. Grizzly Frontignan, berries round; free bearer. The Frontignans require a dry, warm border, especially when

ripening, and to ripen perfectly they require a high temperature, especially by day, a dry atmosphere, and, of course, abundance of air. From their liability to crack the berries should be well thinned. The border may with advantage be formed of one-fourth chalk, in lumps from the size of a walnut to that of a hen's egg.

Other kinds, neither Muscats nor Frontignans, I must again divide into those not requiring much heat, and those which do.

Kinds not requiring strong heat are—Black Hamburgh, Frankenthal, Black Prince, Duc de Magenta, Trentham Black, and Black Champion, all black; Buckland Sweetwater, General della Marmora, Golden Champion, Golden Hamburgh, and Foster's White Seedling, all white or slightly amber-coloured. These ripen in August if assisted with a slight fire heat during March, and later in cold periods and when ripening, constant fire heat not being necessary for successful ripening.

Kinds requiring heat are—Mill Hill Hamburgh, a fine Grape, the finest of all the Hamburghs; West's St. Peter's; White Tokay; and White Nice. These require a temperature averaging 5° higher than is necessary for the Black Hamburgh and the other varieties just named.

Of late Grapes, the Muscats must take precedence. I recommend Muscat of Alexandria, Bowood Muscat, Mrs. Pince, and Madresfield Court Muscat (the first two are not in good order after Christmas—all four I would have in a house by themselves); Lady Downe's; Black Alicante, berries roundish-oval, large, also bunches; West's St. Peter's; Burchardt's Prince, berries oval, medium-sized, bunches long; Barbarossa [Gros Guillaume], berries round, large, enormous bunches; Trebbiano, berries oval, large, bunches enormous; Syrian, berries oval, bunches largest of all; Calabrian Raisin, or Raisin de Calabre, berries round, large; Royal Vineyard, berries round, medium-sized, bunches long.

The Syrian, Trobbiano, and Royal Vineyard, may be objected to on account of their poor flavour. In my opinion the Syrian when well ripened is as good as many others, and it and Trebbiano, for variety of dessert, are indispensable late in the season when there is no other white kind so good as Trebbiano. Royal Vineyard on the same score is also excellent for late purposes. White Nice is well worth growing, though it is not so good in flavour as many, yet its enormous bunches always command attention whether on the Vine or at the dessert.

In conclusion, I would direct attention to the advisability of, as far as practicable, growing in one house only kinds requiring a similar temperature. Frequently we see an extensive vinery planted with nearly every kind of Grape, and some not doing so well as they otherwise would had the house been divided by a partition of glass, and the varieties requiring least heat placed in one part, and those needing most heat in the other. There can be no objection to this arrangement, as the expense of a division is but trifling, and the modifications needed in the heating apparatus will not involve an expense that should deter anyone from adopting the separate system. It is owing to mixed planting and growing in one vinery kinds requiring different temperatures, that some kinds have not their proper place in popular estimation. For instance, Canon Hall Muscat is rarely seen in good condition, and its companion Black Damascus is little better. Both have one fault—*i.e.*, non-setting. What would they be were they grown in a house by themselves, their roots in a heated border, and with a temperature 5° higher than is given to Muscats?—G. Abbey.

OBTAINING MOIST HEAT.

I have a small propagating frame inside a warm house, with a flow and return round the house, and I have enclosed part of one end of the pipes with bricks, and put a frame on the top, covering the pipes with blue slate to support the soil for the cuttings; but I find it is too dry, and burns up the cuttings before they are rooted. I thought of having a zinc trough filled with water to fit inside the frame on the pipes, say 6 inches in depth, and then to put the slates on the top to obtain a moist heat. By having a tap at one end I might take the chill off the water before watering.—Young Beginner.

[You can have all the moist bottom heat you want by merely running a waterproofed rim round the slate, say 1 inch deep, cover it with small pebbles, and on that set the pots, with what plunging material you think best—not to make heat, but merely to retain it. A small pipe will enable you to keep the slate and the pebbles moist. Your proposed substitution of a small tank will answer, but if you cover the top securely your heat will be as dry as from the slate. With a tank, a cover of zinc or plate iron pierced with holes would be best.—Eds.]

SLOW COMBUSTION AND ECONOMY IN FUEL.

My house is a span-roof, 17 feet long and 9 feet wide, heated by a flue which runs round three sides under the stage. There is no ashpit door, and no damper. I at first tried stopping up the ashpit opening, after I had obtained a good fire, by loose bricks, slates, or anything else that came to hand. This answered pretty well, but I could never thoroughly depend upon it. Occasionally I found a too vigorous fire, and the thermometer inside registering 70°; or the fire burnt quite out in a few hours. The plan I now adopt answers much better. I leave the ashpit always open, and thoroughly cleared out. I obtain a good, large, bright fire, and keep it bright if the thermometer is lower than I wish it to be, until it rises to the desired height, which it will do in a very short time; I then throw on four or five shovelsful of fine ashes; I prefer the ashes wet if the night is likely to be cold, as they burn rather better than if dry. If the weather is mild, and I am anxious to keep the heat down, I use dry ashes, and leave the furnace-door about 2 or 3 inches open. I have frequently so left my fire at six o'clock in the evening, and found it still alight at three o'clock the next afternoon, and a nice steady heat maintained.—X. Y. Z.

[There are many roads leading to one place. We know your plan will answer, but it is a wasteful one, as when a furnace-door is left open, the air that freely passes over the fire cools the flue, and there is a consequent loss of fuel. We approve of getting-up the desired heat at once, and then having a slow combustion where a regular heat is wanted in continuous frosty weather. Why not secure the same result more easily and better by having a common, close-fitting ashpit-door, when you can regulate draught? You need no damper for a flue then. We generally use ashes for hacking-up.—Eds.]

CONSEQUENCES OF THE WINTER.

Now that the effects of the severe frost are pretty well known and felt throughout the country, it will be interesting and profitable to report from various parts to what extent we have suffered, and the lowest degree of temperature registered.

On the night of the 23rd of December our thermometer fell to 1° Fahrenheit, and on the 24th to 1° below zero. On both days we had a heavy fall of snow to the depth of 1 foot. Common Laurels, Aucubas, and Laurustinus are all severely injured—not a green leaf to be seen on them, and it will be a difficult matter to know how to cut them until the new growth commences. The Deodars are all severely injured, and must lose all their leaves, and I fear many of our choice Roses will be killed; a fine plant of Maréchal Neil on a south wall is killed, while one on a north wall appears to be unhurt.

What will most affect us at present (and to this I wish to draw particular attention), is the loss of our vegetable crops, as Broccoli, Savoys, and Brussels Sprouts. Cabbage stalks are all killed, and we are glad to bury them to get rid of the unpleasant smell. Young Cabbages which were well covered with snow are injured, but will recover if milder weather come.

Any suggestions which can be offered by your correspondents as to the best and quickest method of providing substitutes for the losses we cannot repair, will, I am sure, be thankfully received by those who may have suffered to the same extent as we have done here in East Kent. I will conclude these few remarks by suggesting a substitute for Peas, which I have heard of and am about to try—that is, to sow any common Peas in boxes in heat, and use the young green tops as a vegetable.—William Anderley, *The Gardens, Bourne Park, Canterbury.*

The Cabbage.—The close-headed variety, which is now more peculiarly called Cabbage, was for many years imported into England from Holland. Sir Anthony Ashley first introduced its cultivation, and made the English independent of their neighbours for a supply. This planter of Cabbages likewise made his name known by other deeds less creditable to his character. It is related that he had a command at Cales (Cadiz), where he got much by rapine, especially from a lady who entrusted her jewels to his honour; whence the jest on him (like on Butler about the spoons, whether true or false). The saying is, that he, Sir Ashley, got more by "Cales" than by "Cab" and Cabbage. As tailors are said to be fond of

"Cabbage," may not this circumstance have given rise to the accusation of "cabbaging," when cloth entrusted to them was appropriated to their own use? It is recorded that Cabbage was first introduced into the North of Scotland by the soldiers of Cromwell. Scotland is more peculiarly the "land of Kale." Old Scotch songs point to the fact. The poet says:—

"There's cauld Kale in Aberdeen,
An' castock's in Stra' bogie."

These castocks are the Cabbage stems, having the fibrous parts peeled off, and the remainder softened by boiling. Sauer krant, that excellent preparation of the Germans, is merely fermented Cabbage.—(*American Gardener's Monthly.*)

[The tradition can be traced far back towards the time in which Sir A. Ashley lived. There is a globular reticulated figure on his monument in the church of Wimborne St. Giles, which the tradition says was intended to represent a Cabbage, and it certainly is more like the globular heart of a Savoy than a "cannon ball," for no artist would represent this even for effect with a netted surface. A correspondent who wrote about the monument in *Notes and Queries* says:—"Evelyn, in his "Acetaria," calls Sir Anthony 'Sir Arth. Ashley, of Wiburg St. Giles.' He says:—'Tis scarce an hundred years since we first had Cabbages out of Holland; Sir Arth. Ashley, of Wiburg St. Giles, in Dorchester, being, as I am told, the first who planted them in England.' 'Acetaria' was published in 1699; so that, according to Evelyn, Cabbages were first brought to this country about 1599, between which date and 1627 (when Sir A. Ashley died) they had been introduced by him into England."—Eds.]

CUTTINGS OF EVERGREENS FOR BEDS IN WINTER.

I WONDER if any of your readers have adopted a plan of making bare beds cheerful in the winter by filling them with evergreen cuttings? The effect in comparatively small beds is admirable, and I am sure anyone who tries this plan would be astonished to find how long they keep fresh and bright in the winter. I would strongly recommend a trial where evergreens are available. Aucubas, Laurustinus, Hollies, Ivies, common and Portugal Laurels, variegated Holly, Carnation cuttings, and innumerable other plants which will suggest themselves to the horticulturist, will be found most effective for such winter decoration. The snow on my beds has now entirely thawed, and I was greatly astonished to find how the cuttings had withstood the hard frost to which they had been subjected; in fact, they look as fresh now (January 17th) as though they had just been inserted.

I first saw the plan adopted upon an extensive scale in a friend's garden, and his gardener informed me that the cuttings are placed in the beds immediately after the bedding plants have been removed and the bulbs planted, and that they remain quite fresh until the spring bulbs appear.—HORTATOR.

TREATMENT OF CAMELLIAS.

REFERRING to the latter part of the communication by "RUSH," (see vol. xix., page 469), respecting Camellias, I wonder at any one turning Camellias into hot pits when making their young growth. I have just had brought under my notice the case of a batch of young Camellias which were put in the Orchid house for the last two years when they ceased flowering, and the consequence is that one-half of them have no flowers now, and they are but a trifle larger as plants than they were two years since. I do not wonder at this, as let a plant remain in a temperate greenhouse or conservatory, when it is ready it will grow—that is, of course, everything else being suitable. And in addition to objecting to turning Camellias into heat I object to the use of peat. The best Camellias I ever saw were those for which no peat was used.

With regard to turning Camellias out of doors, I believe in most cases it is done as a matter of convenience, for in the case of large plants in tubs, &c., there is seldom a house suitable for their reception with the exception of the conservatory, and where the family remains at home in the summer they are placed out of doors on the plea of not being gay. I turn the large plants from the conservatory out of doors, because my vineries are not large enough to hold them. This is done simply as a matter of convenience, knowing that they would be better under cover. I can fully endorse the statement of "RUSH" as to the buds being more liable to fall from plants which have been out of doors, especially if not housed before the heavy drenching rains. This is a subject on which too much cannot be said.—STEPHEN CASTLE, *Bent Hill Gardens, Prestwich.*

ECONOMY OF FUEL.

I LIGHT my fire, putting on a little coal so as to make a nice fire, having all the dampers out. When the water is hot, I put on fuel which I have previously prepared, and which consists of the dust and chips of the coals used in the household. I take the dust mixed with cinders and damped a little. I fill my stove up to the top, close the slide that goes over the ash-pan hole all but an inch, also pushing in another damper, which goes in at the elbow of the flue-pipe, allowing about an inch for the smoke, but, of course, this requires attention to keep the flue-pipe free from soot. I also clear out the clinkers. I always make it a rule the last thing at night—say, at 10 o'clock, to stir up the fire and clear out the clinkers. With this management the fire lasts eight hours, burning regularly, and leaving nothing but clinkers in the fireplace in the morning, whilst the temperature of the house in the morning is 40°. Should it be a severe frost, I rise about 7 A M., go down to the stove, clean it out, stir up the fire, and add a little wood and a little small coal. My management of the stove is on the eight-hour system, and I consider my heating costs only my own trouble, for the ashes used to be taken away. Now that I have the boiler I have them sifted, and I no longer see wasted, as with my neighbours, lumps of nice coal not burnt out which by a little management can be used.—A. B.

[A small house like yours requires, no doubt, personal attendance to heat it economically with a boiler. In many such cases a pipe from a kitchen boiler would be sufficient. We are glad you have succeeded so well. We have no doubt the water-barrel so frequently running over the roots of the Vine causes the berries to crack. Why not move the barrel, or take a large-enough pipe from it into a drain, or away from the border?—EDS.]

ENTOMOLOGICAL SOCIETY'S MEETING.

THE first meeting of the new year was held at Burlington House on the 2nd inst., the President, Mr. A. R. Wallace, being in the chair. Amongst the donations to the Society's library received since the last meeting were the continuation of Sepp's beautiful work on the transformations of Lepidopterous insects by M. Snellen van Vollenhoven, the twelfth volume of Mr. Stainton's work on British Tineina, and the "Entomologists' Annual" for 1870, edited by the same author.

Mr. Butler exhibited a series of Lepidopterous insects recently received from Fantee, in tropical Western Africa, by Mr. Swanzy, including apparently new species of Godaria, Eurynome, Mylothris, and Belenois, species of which two last-named genera of "Whites" appeared to Mr. Butler to mimic each other. Mr. Bates, however, considered the apparent mimicry to be simply the result of the close affinity of the species. A beautiful new Moth of large size, allied to the Saturnia lucina of Drury, was also contained in the collection, which Mr. Butler proposed to name Brahmæa Swanzyi. Mr. Boyd exhibited a variety of Colias Edusa in which the black spot of the fore wings was obliterated.

Professor Westwood described a Geometrideous larva, of which he could find no published description, which he had observed boring a cylindrical hole into Rose buds in the summer. He also noticed that Sepp had illustrated the parasitism of a two-winged fly of the genus Anthrax upon a Moth belonging to the genus Agrotis (A. porphyrea). Hitherto the genus had been supposed to be parasitic only upon bees.

A paper containing descriptions of five new species of Diurnal Lepidoptera by Mr. Hewitson was read.

A specimen of Plusia interrogationis, taken by Mr. Jenner, was exhibited by Mr. Verrall.

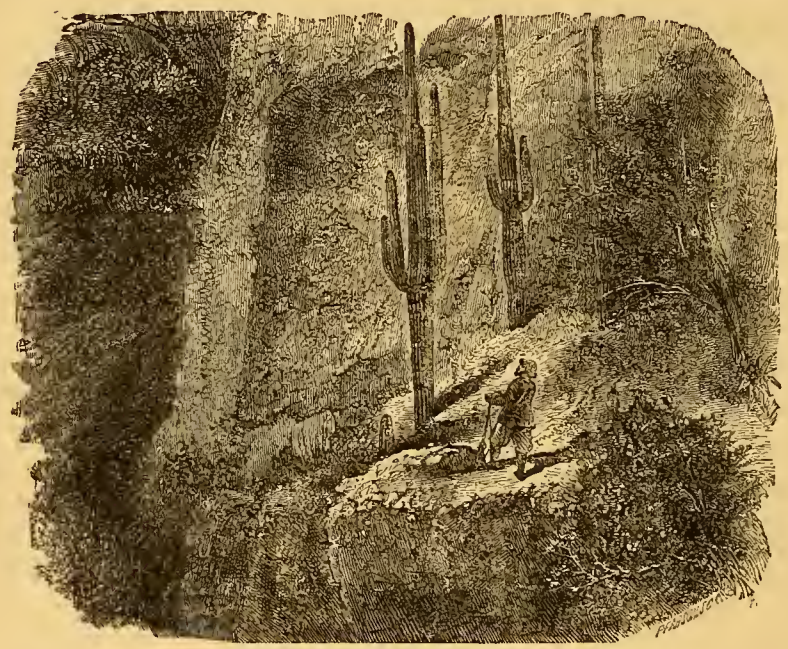
ANOMALOUS PLANTS.

NEARLY thirty years have passed since I was walking, during the cool of the evening, in the Botanic Garden of Calcutta, with its genial curator, Dr. Wallich. We had rested under that tree—a grove of itself—the Banian, and talked of "Giant Plants;" we had gazed on the Amherstia, admired its pale green foliage, pendulous clusters of pink flowers, and long, slender, weeping branches waving before the gentle breeze, and we agreed that it is the worthiest representative of "Graceful Plants." It was our humour then to note such representatives, and we visited the Plantain and Cotton shrubs as worthy members of the "Useful Plants," and the Upas, of fabled power, yet worthy by its virulence to represent "Poisonous Plants." At length we returned to the house, and as we passed the trelliage arched over the steps by which the Ganges is reached, I made some observation on the beauty of the flowers

of the Night-blooming Cereus with which the trelliage was partly covered. "That," observed the Doctor, "represents 'Anomalous Plants.'"

I think that evening's stroll and fanciful grouping of plants had not recently been remembered by me until, walking round the Horticultural Society's conservatory at South Kensington, I came to two cases of "Anomalous Plants," a gift to the Society from Dr. Waggett. They contain exclusively species of the natural order to which the Night-blooming Cereus belongs—the Cactaceæ. The remembrance thus awakened led to a reference to notes made at the time of relative observations by Dr. Wallich, and extracts from works to which he referred me; and these would have again slumbered had I not seen in *Nature* an engraving of the Cereus giganteus, taken from Mr. Bell's book, published by Messrs. Chapman & Hall, entitled "New Tracks in North America."*

Most characteristic is the title, "Anomalous plants," applied to the Cactaceæ. Of the five hundred species, less than a dozen have any leaves, and that dozen belong to one genus, Pereskia, the Barbadoes Gooseberry—they are all stems and branches, and these assume most "anomalous" forms. They are globular in the Melocactidæ, Melon Thistles; they are columnlike in the Cereideæ, Torch Thistles; and they are planiform in the Opuntiæ, Prickly Pears. They vary in size from a few inches to 40 or more feet; some creep along the soil's surface, and others are as erect and high as maypoles. Leafless and thus without the usual means of absorbing moisture from the rains and dews, yet they are among the most juicy of plants, retain their succulence in the hottest climates and the most parched soils, and are there the chief sources of refreshment to men and animals. This and other characteristics of the Cactaceæ I find in the following extract from M. Meyen:—



Cereus giganteus.

"Nature has tried to make up for the imperfections in the form of these plants by the profuseness and splendour of their flowers, for often it seems as if their whole effort was to produce the greatest possible quantity of the gorgeous flowers, with which they are so often completely covered. The extraordinary effect on the physiognomy of vegetation, which is produced by the contrast of the Cactus forms with the other groups of plants, is seen not only in nature, but also everywhere in our gardens.

"In Chili and Peru there are wide plains, which for vast distances, are covered solely by groups of pillar-like Cerei, and thus present a singular and striking, though cheerless prospect. In the Llanura de Rancagua, lying to the south of the Rio Cachapual in Chili, only a few Caven-bushes (Acacia caven, *Mol.*), grow amongst these Cerei, which are often covered with the scarlet flowers of Loranthus aphyllus, from amongst which hang the long, white flowers of the Cereus. When travelling in the interior of Chili we often bivouacked near these Cerei, and their dry woody cylinders furnished the best fuel for our fires. The wood of these plants attains a thickness of 1 or 1½ inch, and the whole cylinder is as much as 12 or 15 inches in circumference. The wood of the Cactus is applied to the most various purposes in the treeless regions of the western coast of South America. As it is very light, it is carried up the Cordilleras, and on the plateaux, which lie far above all arborescent vegetation, doors and beams are made of it without any previous working.

"The columnar Cacti ascend high up the Cordilleras. I have found them on the Cordilleras of Southern Peru, close to the equator, above the heights of 7000 and 8000 feet, and these are also the most beautiful forms which I have ever seen."

Among these is the Cereus giganteus, or Monumental Cactus, which is thus noticed by Mr. A. Smith, in "The Treasury of Botany":—

"It is the Suwarrow or Saguaro of the Mexicans, the largest and most striking species of the genus. It is a native of the hot, arid, and almost desert regions of New Mexico, extending from Sonora, in lat. 30° N., to Williams River, in lat. 35° N., and found growing in rocky valleys and upon mountain sides, often springing out from mere crevices in the hard rock, and imparting a singular aspect to the scenery of the country, its tall stems with upright branches looking like telegraphic posts for signalling from point to point of the Rocky Mountains. While young the stems are of a globular form, gradually becoming club-shaped, and ultimately almost cylindrical, and from 50 to 60 feet in height, with a diameter of about 2 feet at middle height, and gradually tapering both upwards and downwards to about 1 foot. They are most frequently unbranched, but some of the older ones have branches, which issue at right angles from the stem and then curve upwards and grow parallel with it. The stems are regularly ribbed or fluted, the ribs varying in number from twelve to twenty, and have, at intervals of about an inch, thick yellow cushions bearing five or six large and many smaller spines. The flowers are produced near the summit of the stems and branches, and are about 4 or 5 inches long, by 3 or 4 in diameter, having light cream-coloured petals. The fruits are about 2 or 3 ins. long, of a green colour and oval form, having a broad scar at the top caused by the flowers falling away; when ripe they burst into three or four pieces, which curve back so as to resemble a flower. Inside they contain numerous little black seeds imbedded in a crimson-coloured pulp, which the Pimos and Papagos Indians make into an excellent preserve; and they also eat the ripe fruit as an article of food, gathering it by means of a forked stick tied to the end of a long pole."

Referring again to M. Meyen's work, he remarks:—

"In perfect contrast to the long, slender form of the candelabra-like Cacti, are the spherical genera Melocactus, Echinocactus, and Mammillaria. These plants are spherical, having warts and spines arranged in a stellate form regularly distributed over the whole surface; they are often of enormous size, and are seated directly on the barren ground, or in the clefts of bare rocks. These singular plants seem to thrive best in the most desert regions, where all other vegetation ceases; and in hot countries, where almost all vegetation disappears during the dry season, they are as fresh and green as at the time when there was the greatest abundance of water. As their succulent tissue contains a great quantity of watery sap, they are eagerly sought after and sucked by the thirsty animals, which roam over the dry deserts of South America. In kicking off the prickly coat, these animals often injure themselves so much that they can no longer move about, and at last die. At times when there is a want of water, travellers usually open these juicy plants, which have been called the springs of the desert, with their knives, and thus enable the animals to enjoy the sap without danger.

"Just as characteristic are the great unshapely and many-branched Tunas; the Cactus Ficus-indica, *L.* and Opuntia Tuna, with its long spines, are the best known forms of this group of the Cactaceæ. These plants have found their way to Europe, in the south of which they are now naturalised. In Europe as well as in America they are used for making fences, and there is, perhaps, scarcely anything which answers this purpose better, for they have even been successfully applied to

* Messrs. Chapman & Hall have obligingly enabled us to illustrate our correspondent's notes with that engraving.—Eds.

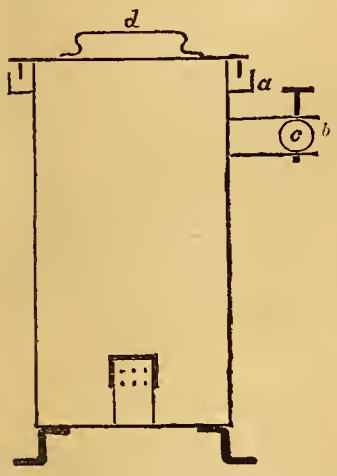
the purpose of military defences—viz., as chevaux-de-frise. Their cultivation is of the greatest importance in desert and barren countries, as they delight in the very driest soils, and not only produce an abundance of edible fruit, but also a considerable quantity of firewood. These Tunas hedges are also need for breeding the American Cochineal insect, and are planted in some provinces of Mexico to a very great extent for this purpose, as formerly the exportation of cochineal from that country was very large."—G.

SLOW-COMBUSTION STOVE.

As some of my friends have had stoves made upon a model I devised about two years since, and as they report very favourably of them, I think it possible some of your readers may be interested, and perhaps helped, by an account of my experience.

About two years and a half ago I constructed a greenhouse entirely of wood and glass; length 10 feet 6 inches, breadth 9 feet, height 9 feet to the centre of the pitched roof. The question of heating it arose as the winter drew on, and I gave an ironplate worker an order for a stove, the performance of which I will presently describe. Having improved upon the first model, I append a sectional drawing of a better form which has been made recently.

The body of the stove consists of a cylinder of sheet iron 6 inches in diameter, in fact a length of 6-inch iron pipe. Its height is 2 feet. The bottom has one opening in the centre, admitting air to a piece of gas-pipe 1½ inch in diameter, 4 inches long, and capped at top. Upon the screw at the lower part of this gas-pipe are two nuts, one fitting above the bottom and the other below; these fix the gas-pipe into its place. The upper part of this pipe (not the cap), is bored by fourteen holes about one-quarter of an inch in diameter. The lid of the stove fits loosely; and outside the pipe and around the upper part is secured, by soft solder, a zinc gutter about three-quarters of an inch deep and the same in width. This, when the stove is in use, is filled with water, and effectually prevents the escape of any of the products of combustion. It is desirable to tin, as it is technically called, that part of the pipe against which the water rests, as it will prevent oxidation. A flue-pipe, *b*, 1½ inch in diameter, proceeds from the stove and contains a throttle, *c*—that is, a flat circular piece of metal, of the same diameter as the inside of the flue, turning upon a pivot, so that, when its transverse diameter is in the same direction as the length of the pipe it does not impede the escaping gas, but when turned across the pipe it closes it. The chimney of my stove is of zinc, and travels from the centre of the end to the opposite extremity of the side of my house, and descends gradually during its whole course.



a, Gutter. *b*, Chimney.
c, Throttle valve. *d*, Handle.

I will now endeavour to explain the philosophy of the arrangements I have pointed out. The fuel chosen is charcoal broken small. Charcoal may be obtained of the requisite size for this stove at a lower price than in larger lumps. The charcoal in burning is converted into carbonic acid and ash. The ash, being that part of the wood from which the charcoal was made, which the tree took up from the earth, is a most valuable manure, and adds wonderfully to the power of potting soil. This ash falls to the bottom of the stove, and so leaves free the holes by which air is supplied. The carbonic acid formed by the union of the oxygen of the air with the carbon of the charcoal is about one and a half of the specific gravity of the atmosphere, and so when cold it falls; but as it is produced in the stove at a high temperature, it is expanded and rises. As it passes into the chimney it cools, and, becoming heavier than the air, tends to descend; for this reason the chimney is made to slant downwards. It thus assists the draught, and acts also as a damper; for if the fire should be dull the chimney pours out its heavy well-cooled charge of carbonic acid, and so draws up the fire; but if the fire be burning fiercely the heat is not expended so readily, and the carbonic acid when it has reached the chimney, still tending to rise, has to be forced out by the rising hotter air in the stove, and this checks the combustion.

The object of the throttle has already been hinted at. By its means the fire may be governed as easily as an ordinary gas-burner.

When my stove was finished I lighted and filled it, and turning the throttle very low left it untouched, watching how long it would burn. It continued alight for a hundred hours. The amount of heat given was very small, but my experiment was to ascertain the lowest combustion attainable. In ordinary frosts I light my fire about nine at night, and next morning put on about a quart of charcoal, turn the throttle very low, and about seven in the evening pour the contents of the stove into a fine round garden sieve. I riddle the lighted contents, and so get rid of the dust, pour back, and refill; and I repeat this day by day with what variations the weather may necessitate. The fire has never once gone out without my intending it during two winters, nor have my plants suffered from frost all through this severe weather owing to the stove failing, although I have had no mats on the roof, and my greenhouse is 100 feet at least from any building, so that it is very much exposed.

There are other points which might need explanation, such as the method of lighting, the reason why plate iron will not answer for the chamber supplying air, cost of fire, &c.; but as I must be trespassing on your space I will leave these matters, promising to take them up should any of your readers need information respecting them.—F. Cheshire, A.C.P.

DECISIONS OF THE FRUIT COMMITTEE OF THE ROYAL HORTICULTURAL SOCIETY.

We are much surprised at reading the report of the Committee's judgment upon the Main Crop Potato at the last meeting, and we would like to ask under what conditions the Potatoes are placed before the Committee, as all the varieties of this important vegetable lately submitted for their inspection appear to receive uniform condemnation. The system of boiling at a place where cooking is not carried on to any extent appears to us to be objectionable, and we think the Fruit Committee should lay down some specific course of action.

We recommend, as the fairest way, that a notice be given, "that no Potato will be judged until it has been grown in the Chiswick trial grounds." Under the present conditions even this trial is no safety, because our Main Crop Potato, which is really a first-class variety, was grown at the Chiswick trial grounds in 1868, and we have reason to believe was then considered to be one of the best, if not the best, of the red-skinned class. We should like to ask Mr. Barron, the garden superintendent, who grew it, to write his opinion of it as grown and tested by him at Chiswick. We fail to see how a Potato can change its character in two years, and we know that when tested on Wednesday, the 18th, the dish of Potatoes had such an appearance when served up, that no gentleman would permit them to be placed on his table. We are strongly of opinion that a bad variety cannot be too soon condemned. We are also equally sure that all varieties should have a fair and proper trial. Having this in view, we should like to ask why the report of the Chiswick trial has never been made public?—James Carter & Co.

WORK FOR THE WEEK.

KITCHEN GARDEN.

Lose no opportunity of bringing the ground into a good working condition for the crops which must soon be committed to it. A generous soil always pays well for the extra labour of frequently turning it. *Asparagus*, a fresh bed should now be planted; a very considerable proportion of leaves should be used in the formation of the bed. The beds in cutting should have air freely admitted during mild weather. A crop of *Beans* should be planted in boxes or pots, which should afterwards be placed in a forcing house. At the same time a crop should be planted in the open ground where it is in good condition. Make a sowing of Early Horn *Carrot* on a slight hotbed, to come in for a first crop. Where the soil is light and dry, a sowing may be made on a south border. Those who are short of old *Onions*, or who wish to grow some of a large size, should now sow some White Spanish in a box, which should be placed in a forcing house. The Underground sort may now be planted.

Sow *Peas* in pots or boxes for planting out in March, also two crops in the open garden, one of an early variety, the other of an approved kind which does not come in so quickly. Sow another crop of *Radishes* in a frame where there is a little bottom heat, or they may be sown where Potatoes are planted. A crop should also now be sown on a south border. Keep up a succession of *Sea-kale* and *Rhubarb* either by covering the roots with pots and fermenting material, or by planting them in pots and placing them under stages in the greenhouse or stove. The latter method has the advantage of giving much less trouble than the former, a great consideration in the busy time which is approaching.

FRUIT GARDEN.

Planting in every part, both against walls and in the open quarters, should be completed without delay. Mulch the newly-planted trees, and at once stake those requiring support. Prune and nail Apricots, and continue the same with other wall trees not yet completed. The following composition is recommended as a dressing for Peach and Nectarine trees—viz., Scotch snuff, fresh slaked lime, sulphur vivum, of each 1 lb.; mix with soap-suds to the consistency of paint, add sufficient soot to make the whole of a grey colour, and lay it on with small paint brushes. I suspect this composition has a more important influence than the destruction of insects or their eggs, as the leaves of the trees to which it is applied are generally of a more healthy appearance throughout the summer than those left without dressing. Where Filberts are brought under the dominion of the knife and spade—by far the best method of cultivating them—let all suckers be effectually removed, and some manure forked in about the trees. Shorten all the strong shoots of last year's growth, but do not interfere with the small ones, as it is from these the nuts are principally produced. It is better to thin out the large branches if they are crowded with wood.

FLOWER GARDEN.

Proceed as rapidly as the weather will permit with the removal and planting of large shrubs. Layering may be successfully performed where the plants have become bare and unsightly at the bottom. Fork over the borders in the shrubbery, sweep and roll the grass edgings and walks, remove everything unsightly, and let the whole assume an air of neatness and order. Those who are much annoyed with worms may try the following receipt—Take 1 oz. of corrosive sublimate, grind it fine, and dissolve it in sixteen gallons of water; then with a watering-can and fine rose water the turf infested. This will bring all the worms in a great hurry to the surface, when they may be picked up in a watering-can and carried to a distance. Anemones and Ranunculuses may be planted if the ground is in a dry state, and the weather mild. If the soil of the bed be in a poor condition, throw it out to the depth of 1 foot, place a layer 6 inches thick of well-rotted hotbed and cow dung, and fill up the bed with fresh maiden loam from a pasture. Before planting, lay the roots between the folds of a wet piece of flannel for twenty-four hours. Carnations and Pinks in pots should be attended to; remove all damp, and protect them from heavy rains. Keep Auriculas and Polyanthuses tolerably dry at this season. Prepare a rich compost for top-dressing by frequent turnings. Hyacinths may still be planted; to have them in perfection apply plenty of rotten cow dung to the beds. Those beds which were planted in autumn should be stirred on the surface with a fork, and top-dressed with the same material. Prepare beds for Pinks, Carnations, and Pansies. Look over the Dahlias, and remove all decayed portions from the stems and roots.

GREENHOUSE AND CONSERVATORY.

Now that the shortest day is past some of the plants which it is intended to make the most of during the growing season may be started gently preparatory to being potted about the middle of next month. Any nice compact plants of the finer varieties of Scarlet Geraniums which are intended to make specimen plants for vases, baskets, or single specimens on the lawn during summer should now be shaken out of their pots, and repotted in fresh soil. Give them, if possible, a gentle bottom heat for a week or two until they make fresh roots, and keep a moderately moist atmosphere, with a temperature of from 45° to 50°. After they have fully recovered the check remove them to a light airy part of the greenhouse, and place them in large pots or tubs towards the end of March, where they will produce trusses of splendid bloom from June until September or October. Herbaceous Calceolarias from this time forward should be grown rapidly, potted in similar compost to the Geraniums, and kept in a moderately moist, close atmosphere of from 45° to 55°; draw a syringeful of clean tepid water over them about one o'clock on clear sunny days, and remember that the green fly will quickly devastate your Calceolarias if you do not fumigate with tobacco about once a-fortnight. Cinerarias, if they happen to be underpotted, or have been standing near the heating apparatus during the late severe weather, must be sharply looked after, or they will soon become smothered with insects. Fumigate them in time, and assist those which are coming into bloom with a little clear liquid manure once a-week. Fuchsias must also be looked to without delay, where fine specimen plants are required. Shake the old plants out, reduce the roots, and repot them, introduce them to a forcing house at a temperature of about 60°, and as soon as you can take cuttings an inch long, strike them, and grow them as quickly as possible, remembering that if you want large plants they must be grown to a considerable size before they show bloom. For soil use light, turfy, sandy loam, such as the edgings of gravel walks, with turfy peat, half-decomposed leaf mould, a little charcoal, and some sand.

STOVE.

Some of the plants will now begin to grow, such should be potted if they require it, and be placed in the warmest and lightest part of the house. Seeds of stove exotics may now be sown; some will require to be placed in a hotbed, particularly the seeds of many of the Leguminosæ, while others will do better in a stove where there is a greater amount of air and less heat.

PITS AND FRAMES.

Give plenty of light and air to these structures in fine weather. Inspect the plants at every opportunity, and pick off all damp and decaying leaves. Fumigate with tobacco if the plants be infested with green fly; this ought to be attended to prior to taking off cuttings, as this insect soon increases in number when brought into a higher temperature. Pot off autumn-struck cuttings of Scarlet and Ivy-leaved Geraniums, Fuchsias, Verbenas, shrubby Calceolarias, &c., that are still in the cutting pans; place them in a little heat till they are well rooted. Make a hotbed for cuttings and seeds with fermented dung well sweetened. Those who do not possess great advantages, and yet are expected to have the flower garden very gay in the summer and autumn, may do much with a small supply of fermenting material by making a hotbed 3 feet high at the back, 2 feet high in front, and the size of a single-light box.—W. Keane.

DOINGS OF THE LAST WEEK.

Up to this, the 21st instant, we have had a trying week for gardening. What with dense fogs and mists, heavy rains, boisterous winds, snow, sleet, thaw, and frost, fitfully and almost hourly succeeding each other, we hardly knew what to do as respects all out-door gardening. No better proof than we have had of late could be given of the advantage of a small house of glass over a pit or frame, as with the latter little could be done in such weather. A house, with means of *heating* it, is also a great improvement over a house not heated at all, or heated imperfectly; for nothing is a greater damper to enthusiasm in gardening than to see plants perishing from cold, and be destitute of the means of preventing it. For all small houses, heating by a brick or iron stove inside the house will ever be the most economical plan, and a little care will prevent dust from ashes. The firing, &c., can all be done under cover. The next cheapest mode is having a little flue either beneath the floor-level, the top of the flue forming part of the tiled pathway, or the flue may be placed above the floor, where it will be least conspicuous. We prefer the former, as the flue is not seen. Hot water will always be found the best where there is much heating to be done. Where the place is very small, heating by gas, with or without a little boiler, is very handy, and so is heating from a kitchen boiler, when the position suits, and it will only suit when all the heating pipes are above the level of the boiler.

The work as a whole was very much a repetition of what we have alluded to in previous weeks' notices, and, therefore, without any particular arrangement as to departments, we shall allude to a few matters that have come more prominently before us.

Window Gardening.—When Geraniums and other plants have been kept in warm rooms, they are apt to be lanky and sickly after such a winter, and may want a little nipping back, but as this done now would be apt to retard blooming, it is better to avoid it, if the plants are at all stubby. We have received many complaints from those who grow in pots and

boxes Scarlet Geraniums, which they either cut down in the boxes in which they grew, or cut down, took up out of the ground, and packed firmly like faggots. The complaint is, that from covering up in a dry room in the hardest frost, the plants seem alive, but make no growth. All the better for them if they do not for a month or more. If such plants make some leaves the size of a sixpence by the middle of March, they will be quite early enough for blooming in a balcony or garden in June.

The great enemy to window plants grown inside of our rooms in winter is the dust, which will collect on the foliage, and soon makes the plants sickly and woebegone. The great cure is frequent sponging and washing the leaves. The plants look very different after such a bath. The water used should be fully as warm as the room, say from 60° to 65°. If used warmer, it is apt to make them tender. A very quick way of doing this washing, in the case of moderate-sized plants, say in 5 or 6-inch pots, is to have a pail of the warmed water, place a piece of cloth firmly over the surface of the pot to prevent soil falling out or the water wetting it too much, reverse the plant, and pull the head gently through the water, so as to wet every leaf and bit of stem. Then use a sponge, or draw your fingers softly through and along the leaves, so as not to injure them, and then swinge the head again in a pail of clean water. At this season excess of watering is to be avoided. If the room is hot and dry a sprinkling over the top will often be more beneficial than saturating the roots. In no case, except, perhaps, that of a strong vigorous flowering bulb, should any water be left, except for a minute, in the saucers. Pricking up the surface of the soil, and adding a little fresh, will much improve the appearance of the plants, and they will also rejoice in clean pots. A dirty slimy pot is a disgrace to a window, and a plant will not thrive in it so well as in a clean pot. All such pots are apt to be tell-tales in more ways than one.

When we advise very careful watering we do not wish that the soil should be allowed to be dust-dry. When it is necessary to water, give enough to moisten all the soil containing roots, and then wait patiently until your services are required. Do not be afraid to turn a ball out now and then, or put your finger down into a pot, so as to render yourselves sure as to its condition. Without such trouble perhaps you may gain the knowledge wanted just by ringing the pot with your knuckles. If it emits a dull heavy sound you may keep away the watering pot. If it emits a clear sound like a clean whole vessel of earthenware, you may be sure the soil is dry.

There is hardly, however, any rule without exceptions. Thus some of our window gardeners have taken to Cinerarias and Calceolarias in winter and spring. Both like moisture, and they will thrive all the better from standing on a cool bottom, such as a little moss kept moist in the bottom of the saucer. Such treatment would ruin the Cactus tribe, which we are glad to find are becoming favourites with many window gardeners, owing to the splendid colour of the blooms in summer. If the room is not very warm, they will need little or no water in winter, unless the succulent stems show signs of shrinking. Damping the stems will often be better than watering the roots until the days become longer and yield more sunlight. Fuchsias kept in cellars or spare rooms, if now beginning to break, showing little leaves, should be brought to the light, and ere long be repotted in the same-sized clean pots, getting rid of a good portion of the old soil. The more growing plants are exposed to the full light the better, and much may be done in a window by frequently turning and moving, so that all may obtain a due share of light. The safest place for all such favourites in severe frost is the middle of the living room at bedtime, and even then in very severe weather a clean cloth thrown over them will be a great means of protecting them, and keeping them clean.

In alluding to old *Scarlet Geraniums* either saved in the boxes in which they grew, or taken up and packed, the great point after all the leaves have been removed late in autumn, is to keep them over the winter, and give no encouragement to growth until the spring. Very little water will be required in winter if they are kept in a cool airy place, free from frost, and nothing is better than a little dry hay or short litter shaken over them, and then any spare room will keep them well. If a little water should be necessary to prevent their becoming dust-dry, instead of deluging the pot or box it is better to make a few holes with a pointed stick, and pour the water gently into them, allowing it to percolate gradually through the mass. Were many of our readers thus to treat old Scarlet Geraniums, they might have the same plants on their balconies year after year, for a score of years, by merely picking away the surface soil in spring, and adding rich compost. The succulence stored up in the old shoots acts as a reservoir of supply, just like a tuber or a bulb. It is very different with all young plants raised from cuttings in summer and autumn. These must have light and air, and be kept slowly growing all the winter. The old-established plants are, therefore, the best for the millions of window gardeners who have no house or pit to help them.

Raised Banks in the Kitchen Garden.—Besides what was lately alluded to, we have met with instances of the advantage in such severe weather of dry and even northerly exposures. For instance, on a bank on a north aspect young Coleworts have stood untouched by the frost, whilst those on a southern exposure and on the level have somewhat suffered. Lettuces sown and planted out at the foot of walls, &c., with east, west, and south exposures, have suffered severely, though protected with laurel boughs and a little litter, whilst plants on broad ridges having a row along the centre and three or four rows on each side, have as yet stood uninjured. The greater dryness no doubt helped them.

We have been collecting material for hotbeds, some to be rather permanent, and others for temporary purposes. As stated in previous years, we make the most of stable manure, not working it too much before using it, and covering with a layer of sweet warm tree leaves. We have some excellent dung at present, pretty well made to our hand. In the severe frost it was not safe to take the horses out for exercise, and a ride was made in the stable yard by spreading the dung there day after day. It has thus been well cut up and mingled by the horses' feet, and after lying a few days will be in fine condition for Cucumber beds, and even first-rate, after one or two turnings, for Mushroom beds.

Prepared beds for *early Potatoes*, Horn Carrots, Radishes, Lettuces, &c., as referred to last week. We think we gather Ashleaved Potatoes earlier when we have them several inches in height in small pots, and the pots filled with roots before planting them in a bed. There is no better plan of securing early Potatoes than growing them singly in 6 or 8-inch pots, earthing the pots over as the plants grow, but letting the tubers come on in the pot. They in general come considerably earlier than when planted out in a bed, and where the roots have more free space to run in.

Radishes protected in an earth-pit are still pretty good, but are not so crisp as younger ones raised on a little heat. We generally grow a good many in an early Carrot bed, the seed being sown broadcast, and in various ways; but we think we obtain the largest supply of Radishes and Carrots, and the one interfering but little with the other, by sowing the Carrots in rows 7 or 8 inches asunder, and the Radishes in rows between. The Radishes will be gone by the time the Carrots want all the room. There is nothing that can yield better than a small bed of the Dutch or Early Horn Carrots, and they are very sweet when assisted with a little heat. Instead of thinning so much, we prefer thinning as we pull for use.

Coolness for Calceolarias.—We have alluded to the importance of a small heated house for an amateur, over a pit or a frame. Perhaps there is just one thing where artificial heat would not be of much advantage, and that is in the case of our bedding Calceolarias. We feel sure that bad results in the summer and autumn are often owing to the coddling the plants receive in heated places in winter. We think they do better when, from taking the cuttings in October up to planting-out time, they never in any way receive fire heat; not but that they will thrive very well in a house that is a little heated, but they ought to be as cool and airy as possible, and must be kept much moister than would suit Geraniums of any section. Ours seem all right as yet in a cold pit, though it was covered up more than a fortnight, but they were too cool to grow much.

Verbenas.—It is only fair that failures and misfortunes should be chronicled as well as successes. Generally we have had no trouble with Verbenas, striking them thickly in pots in autumn, keeping them in these pots all the winter, and cutting the tops off for spring propagation, as we generally preferred spring-propagated plants for free growth and free flowering. Last autumn we used fresh sandy loam, and other modes the same as usual, and the plants struck well and looked well until the winter fairly set in, and then they began to show brown and black blotches at the points, and then the same discoloration proceeded farther down until the plants almost died outright. A number of years ago we prided ourselves on having a good collection of bedding Calceolarias, but the most tender of them began to be affected in much the same way, and many

varieties we had to give up. We failed to find out the cause of the disease. If we have had nothing of the sort amongst the Calceolarias of late years, there is no credit whatever due to us; for, just as with the Cucumber disease, we are quite ignorant of what caused it or what enabled us to get rid of it. We are equally ignorant of the cause of this attack on the Verbenas, though from the great dryness of the summer, and an inability to give water for months, we had an unusual difficulty in securing cuttings. Have others had their plants assailed in a similar way? or could they assign a reason for this gradual withering up? We may add that they were not affected by frost, and were kept much the same as we have treated them successfully in other years.—R. F.

TRADE CATALOGUES RECEIVED.

E. P. Dixon, 57, Queen Street, Hull.—*Catalogue of Seeds for the Farm and Garden.*

D. Gold McKay, Market Hill, Sudbury, Suffolk.—*Illustrated and Descriptive Spring Catalogue of Flower, Kitchen Garden, and Agricultural Seeds.*

Smith & Simons, 36 and 38, Howard Street, St. Enoch Square, Glasgow.—*Cultural Guide and Descriptive Seed Catalogue.*

C. H. Dickson, 23, Market Place, Manchester.—*Catalogue of Vegetable and Flower Seeds.*

Peter Lawson & Son, 20, Budge Row, Cannon Street, London, E.C., and George IV. Bridge, Edinburgh.—*Catalogue of Garden Seeds, Bulbs, &c.*

Edward Taylor, Malton. — *Catalogue of Agricultural, Kitchen Garden, and Flower Seeds, &c.*

R. Dean, 8, Denmark Villas, Ealing, London, W.—*Descriptive Catalogue of Vegetable, Farm, and Flower Seeds.*

James Vick, Rochester, New York.—*Illustrated Catalogue and Floral Guide.*

TO CORRESPONDENTS.

Salt or Saltpetre for Mushroom Beds (*A. Y. Z.*).—Such saline manures are very injurious to all fungi. A little salt put upon a Mushroom reduces it to a black liquid and pulp.

Roses (*A. B.*).—The first you name we think must be Hybrid Perpetual Enfant du Mont Carmel, the second Reine d'Angleterre (Gallica), and the third Duchesse de Cambacérès (H. P.). The reason you could not find them is, they have been superseded by better varieties.

Hays' Stove.—"*K.*" wishes to know if any of our readers has one of these stoves to dispose of. If so, let them communicate with the publisher of this Journal.

Musa Cavendishii after Fruiting (*J. C.*).—After fruiting, the plants are of no value except for affording suckers. Immediately the fruit is cut take the plants out of the old tubs or pots, partly disrnot, pot, and plunge them in a bottom heat of 85°. Suckers will be produced readily, and should be transferred to small pots, and shifted into larger pots as required.

Alocasia metallica and macrorhiza Culture (*Idem*).—Pot them now or early next month, or just when they are beginning to grow, using for the former a compost of two parts fibrous brown peat, one part old dry cow dung, one part light fibrous loam, and one part charcoal in lumps between the size of peas and hazel nuts, the whole being torn in pieces with the hand, and not very finely, using the compost rather rough. Add one part of silver sand, mixing the whole well together. For A. macrorhiza employ the same ingredients, but let the compost be finer than for A. metallica. After potting place the plants in a house with a brisk moist heat, and if the pots could be plunged in a bottom heat of 80° to 85° all the better. The top heat should range from 60° to 65° at night, and 70° to 75° by day until March, when the temperature may advantageously be raised to 65° or 70° at night, and 75° to 85° or 90° by day, admitting air moderately, and maintaining a moist atmosphere. Shade will be necessary from very powerful sun.

Blue Gown Cucumber (*H N.*).—It has been awarded three first-class certificates, and is described as "a superior black spine, growing to a length of 26 to 30 inches, of uniform size, and having a fine bloom." Our correspondent also wishes to know where "Tindall's No. 2" Cucumber seed may be obtained.

Mulberry Propagation (*E. M.*).—Cuttings may be put in either in spring or autumn. You may put them in from now until March. Take the well-ripened shoots of the previous year, giving the preference to those from the upper part of the tree, and each cutting must have a joint of the two-year-old wood at its base. Insert the cuttings in light, sandy soil in a shady place, leaving two or at most three eyes above ground. All they need is weeding, watering in dry weather, and protecting from frost in winter, strewing some dry litter over them in severe weather, and removing it in mild periods. You wish to put in a branch; cut it off immediately below a fork or joint, and trimming off the shoots to a height of 18 inches from the base, insert it in the ground in light soil in a warm border, but shaded, and a foot to 15 inches deep. Make firm with a stake, and water in dry weather. The age of the branch is immaterial, only it should have some portion of wood more than a year old.

Pruning Laurels (*J. R. W.*).—The mode of pruning pursued by your gardener is good, and we have no suggestions to offer, only as you object to the appearance of the shrubs for a time after pruning, they must have been cut back very much, so as to remove all or nearly all their foliage. We should cut them back in March, or when they are beginning to grow, and go over them again in July or August, and remove any irregularities of growth. This for the common Laurel, but the Portugal Laurel we would only prune every alternate year, and instead of close pruning every year, we would every alternate season merely remove any irregularities of growth. When hard cut every year they become weak and stunted in growth.

Planting Under Large Chestnut Trees (*M. D.*).—As turf will not grow we know of nothing that would serve you so well as Ivy. We advise Rægner's Ivy, which has large distinct dark green foliage. Periwinklee would also answer, and are very pretty, Vinca elegantissima being especially fine.

Plants for Greenhouse (*Amateur*).—Your house will be suitable for the following, but having a temperature of 65° it is not a greenhouse, but a stove; 45° is the highest temperature from fire heat any greenhouse plant requires:—Acacia armata, A. oleifolia elegans, A. pulchella, Acrophyllum venosum, Beaufortia splendens, Aphelexie macrantha purpurea, Boronia Drummondi, Chorozema cordatum splendens, Citrus japonica, Correa Brilliant, Cyclamen persicum vars., Cytisus racemosus, Eutaxia floribunda, Hydrangea japonica variegata, Kalosanthes miniata grandiflora, Myrtus communis, Nerium rubrum plenum, Rhododendron jasminiflorum, Statice brassicæfolia, and Vallota purpurea. Azaleas: Brilliant, Criterion, Mars, Queen Victoria, Stella, and Duc de Nassau. Camellias: Fimbriata, La Pace, Madame Pepin, Monarch, Valtevaredo, and Alexina. You can add Fuchsias, Pelargoniums, Cinerarias, Calceolarias, and Primulas, which are effective in their season. The back wall we would cover with Camellias, or Habrothamnus elegans and Luculia gratissima, all winter-flowering. If the back wall be shaded by plants in front, no flowering plant would thrive on it.

Gesnera Treatment (*M. A.*).—Your plants being those of G. exoniensis, you have failed from their requiring a stove temperature. They will not succeed well in a greenhouse, or only for a short time when in flower. Your only plan will be to keep them in a light and warm position in your greenhouse, giving no water beyond enough to keep the foliage fresh or from flagging, and gradually dry them off. In July repot, and place them in a hotbed, growing there as long as you can, and before cold weather sets in remove them to the greenhouse, but we fear they will not flower unless you can give them a temperature of 55° at night. We grow our plants in a late vinery, and transfer them to the stove for flowering. They have been in good bloom the past six weeks, and we shall now dry them off.

Anonymous Correspondence (*Quæstor*).—The observations were directed generally to check unworthy conduct. Your observations are altogether personal, and written to annoy without the possibility of being beneficial.

Hot-water Piping (*A Subscriber*).—If you did not object to the first expense, you would need from three to four 4-inch pipes all round the house.

Advertising (*S. E. F.*).—Your advertisements will be 3s. each.

Applying Sulphur (*Lupus*).—Using a pair of bellows is the common mode, well known to gardeners.

Roses (*W. H. B.*).—The varieties you name would do very well at Upper Norwood.

Cucumber (*Thomas Eads*).—We do not know where Dale's Conqueror Cucumber is to be had. Seedsmen who possess it ought to advertise it.

Fruit Trees in Orchard House (*A Subscriber*).—For such a lean-to house, and where the plants are to be allowed to grow some size, we would, as there are trees against the back wall, have two rows of Peaches and Nectarines in front, and say at 4 feet apart, or eight in the row. These might be of Peaches—one Acton Scott, one Grosse Mignonne, one Noblesse, one Royal George, one Violette Hâtive, one Barrington, one Walburton Admirable, one Tèton de Venus. Of Nectarines—two Elruge, two Violette Hâtive, two Rivers's Orange, one Downton, one Roman. By having small plants you could have twenty-four plants instead of sixteen, and some put them as close together as 2 feet apart, but we do not think anything is gained by crowding. In such a house with pipes round it, Vines in pots will do very well until those on the roof come in. With Peaches on the wall, and the pyramids and standards in front, we would not plant Vines so closely as 4 feet apart. If you do, as they fill the house, the trees shaded by them will do little good; from 6 to 8 feet apart would be better. You cannot beat Black Hamburgh for such a house, and Royal Muscadine and Buckland Sweetwater as Whites. If you want to have them late, then Raisin de Calabre and Lady Downe's. With late Grapes, however, you cannot use the house much until they are cut. Six feet will do for a Vine border if you cannot have more, but we would have the border inside and outside too if you could manage it, and plant inside.

POULTRY, BEE, AND PIGEON CHRONICLE.

FRENCH FOWLS.

In your report on the Bristol Show, I see you remark that not a single La Flèche cock was exhibited in the French class. I have been for some time a fancier and breeder of this description of fowl, and have taken many prizes, and I must say I would never think of sending my fowls to any show where the French breeds are all classed together, knowing well that my fowls would stand a bad chance of winning when competing with breeds of a larger description, such as Crêve-Cœurs and Houdans. The entries in the French classes at the above Show were very large, and were worthy of separate classification. Generally speaking, the committees of poultry shows do not give the breeders of French fowls much encouragement. —George Alex. Stephens, *Dublin.*

Light Brahmas.—The Torquay Show bids fair to become as distinguished this year as last, and I hope it may be so in every class. To insure a collection of Light Brahmas, such as has not been hitherto seen west of Bristol, I hope to get up a good cup for the best pen of this handsome variety, one which has perhaps

been established more by the perseverance of a few admirers in offering cups than any other. Mr. Pares has kindly offered his assistance, and I now appeal to every admirer in the fancy to give me his support, and also to send specimens to the Show.—JAMES LONG, *Princess Square, Plymouth.*

OUTRAGE ON A PRIZE BIRD.

HAVING had a most mischievous outrage—and I regret to hear by no means an uncommon one—perpetrated on a valuable bird on its way from the Bristol Show, I venture to suggest a remedy which might be practicable if secretaries would only be willing to lend their aid towards it. My Silver-Grey Dorking cock, which had just taken the first prize at Bristol as at various other places, has been on his way home entirely stripped of sickle feathers, as well as of some of the other side tail feathers, one of the great ornaments of this breed, as every connoisseur well knows. A handsome bird is thus for a year made useless for showing as well as unhappy to look at, and is also weakened. Such outrages are made possible by the way in which baskets are fastened at shows, with little bits of wire, easily untwisted and twisted up again at any station. I beg to suggest that exhibitors of specially valuable birds should keep a padlock for each basket, with two keys, one of which should beforehand be sent by post to the secretary, and he or his deputy alone use it, and after the show return it to the owner.—O. E. CRESSWELL.

KENDAL POULTRY SHOW.

THIS was held in Albert Buildings, on the 19th, 20th, and 21st inst, and in all respects was much superior to any of its predecessors. The number of entries in the Poultry department was 658. The success of the Show this year must be a great satisfaction, both to the Committee and the excellent Hon. Secretary, who did all in their power to add to the comfort both of the visitors and the very valuable stock placed under their care. The great number of cups and other articles of plate offered by private gentlemen, and some by the Committee, no doubt caused the large increase in the entries. Mr. Hewitt, who was to have been one of the Judges, was prevented by indisposition, and the awards were made by Mr. Teebay, of Fulwood, Preston, and Mr. Dixon, of Bradford.

The *Game* classes were of very great merit, in fact we never saw a better lot brought together. The five classes contained fifty-four pens, most of the principal Game exhibitors in the country competed, and a great many first-class birds had only a high commendation. Of the *Hamburghs* there were not large entries, but nearly all the pens were everything that could be desired. Mr. Belden took the cup with a beautiful, and we think we may say a perfect pen of Gold-spangles. The adult *Dorking* class numbered sixteen pens, the chickens twelve pens, and Silver-Greys ten pens. The cup for the best pen went to the chickens of Messrs. Gunson & Jefferson, of Whitehaven. The *Cochin* classes were all of very high quality, and the entries were large in all the classes. The cup went to Mr. Taylor, of Mauchester, but the best class in the Show was that for the Whites. We never saw so many first-class birds of such faultless purity brought together before. Mr. Sichel's first-prize pen was a treat to look upon, and Mr. Smalley's was scarcely inferior; both these gentlemen may be proud of their birds. Many of the *Spanish* were of great merit, Mr. Brierley taking the cup with a wonderful pen. The *Brahmas* were mostly good, and the entry large. The Selling Class contained seventy-three entries, nearly all breeds being represented, and all were to be sold by auction during the Show. The entries in the Bantam classes were large, and all the classes were really good. The cup for a single Game cock was won by Mr. Julian, of Hull, in a splendid class of seventeen. The cup for Ducks was won by Mr. Stott, of Rochdale, with Rouens in a class of twenty-one. The East Indian Ducks were capital in plumage, and an entry of seventeen is something to be proud of. Mr. Burn took both first and second prizes. All the *Pigeon* classes contained some capital pens; most of the local classes were very good, and several pieces of plate and cups were awarded in them.

GAME.—*White and Piles.*—1, T. Mason, Lancaster. 2, C. W. Brierley, Middleton. 3, J. Stabler, Driffield. *hc*, R. Knight, Gilthwaiterigg; J. Brough, Carlisle; H. C. & W. J. Mason, Drighlington. *c*, H. Thompson, Penrith. *Black-breasted and other Reds.*—1 and Cup, C. W. Brierley. 2, T. Mason. 3, H. M. Julian, Hull. *hc*, J. W. Will, Errol; E. Ackroyd, Ecclesbill; J. Barrow, jun., Bradley Field, Kendal. *Chickens.*—1, J. Mashiter, Ulverston. 2, J. W. Will. 3, H. M. Julian. *hc*, E. Ackroyd. *Any other Variety.*—1 and 3, H. M. Julian. 2, —Woodhouse, Ulverston. *hc*, H. Jowett, Idle; J. Mashiter; W. J. Cope, Barnsley. *c*, H. Jowitt; C. W. Brierley. *Hen.*—1, C. W. Brierley. 2, J. Barrow, jun. 3, F. Sales, Crowle. *hc*, T. West, St. Helens; T. Mason; T. Kew, Burton, Westmoreland. *c*, Mrs. A. Dawson, Kendal.

HAMBURGHS.—*Silver-spangled.*—1 and 2, D. Lord, Stacksteads. 3, H. Beldon Goitstock. *hc*, Ashton & Booth, Mottram. *Golden-spangled.*—1 and Cup, H. Beldon. 2, H. Pickles, jun. 3, J. Ogden, Hollinwood. *hc*, J. Newton, Silsden. *Silver-pencilled.*—1, H. Pickles, jun. 2, W. M. Mann, Kendal. 3, H. Beldon. *hc*, H. Smith, Keighley; J. Robinson, Garstang; H. Pickles, jun. *Golden pencilled.*—1, H. Beldon. 2, C. Moore, Poulton-le-Fylde. 3, J. W. Will. *hc*, H. Pickles, jun.

DORKINGS.—*Coloured, except Silver-Grey.*—1, D. Gellatly, Meigle. 2, Mrs. Arkwright, Sutton Scarsdale, Chesterfield. 3, J. Robinson. *hc*, S. H. Stott, Roehdale; R. D. Holt, Windermere; J. Copple, Preacot (2). *Chickens.*—1, Gunson & Jefferson. 2, Miss Fairhurst, Ormskirk. 3, W. W. Ruttlidge, Storthead. *hc*, W. H. King, Roehdale; S. H. Stott; Mrs. Arkwright; J. White, Warlaby. *Silver-Grey or any other variety.*—1, R. Smalley, Lancaster. 2, W. Jackson, Bolton-le-Sands. 3, J. Robinson. *hc*, R. D. Holt.

COCHIN-CHINA.—*Cinnamon and Buff.*—1 and Cup, W. A. Taylor, Manchester. 2, G. H. Proctor, Durham. 3, J. Sichel, Timperley. *hc*, Gunson & Jefferson; J. Watts, King's Heath, Birmingham. *c*, R. Hine, Bedlington; W. Marsland-Milverton; J. Hine, Kendal. *Brown and Partridge-feathered.*—1, E. Tadman, Whitchurch. 2, J. White, Whitley, Netherton. 3, T. Sharp, Ackworth. *hc*, W. A. Taylor (2). *White.*—1, J. Sichel. 2 and 3, R. Smalley. *hc*, R. Smalley; E. Fearon; J Sichel; J. Stephens, Walsall. *c*, H. Yardley; A. D. Cochrane, Stourbridge.

SPANISH (Black).—1, C. W. Brierley. 2, H. Beldon. 3, H. Wilkinson, Earby. *hc*, G. C. Wilson, Milnthorpe; Hon. Miss D. Pennant, Penrhyn Castle, Bangor. (2). *c*, H. Yardley; H. Monson, Bishop Auckland.

BRAHMA POOTRAS.—1, J. H. Dawes, Birmingham. 2, Mrs. Arkwright. 3, J. Sichel. *hc*, J. W. Brockbank, Kirksanton; W. Masland; E. Leech, Rochdale; Hon. Miss D. Pennant; J. Mashiter; J. Watts. *c*, Mrs. W. F. Wharton, Birmingham.

ANY OTHER VARIETY, EXCEPT BANTAMS.—1, H. Beldon. 2, W. A. Taylor (Cuckoo Cochins). 3, R. Smalley (Crève-Cœurs). *hc*, Mrs. W. F. Wharton (Houdan); J. Robinson; J. Watts.

SELLING CLASS.—1, R. Smalley (White Cochin). 2, J. W. Fawcett, Old Hutton (Rouens). 3, H. Wilkinson, Earby (Black Spanish). *hc*, W. Bentley, Scholes-in-Cleckheaton; W. M. Mann (Silver-pencilled Hamburghs); H. Yardley; H. Lickbarrow, Kendal; G. Fawcett, Lyth; S. Cox, Stacksteads (Rouens); T. J. Harrison, Kendal (Black Spanish); T. Whittaker, Melton Mowbray (Pile Game); E. Fearon; J. Swinbank, Crook (Black East Indian Ducks); J. Robinson; J. J. Waller, Kendal (Dorkings); H. Pickles (Polands); J. Watts. *c*, Miss C. E. Palmer (Golden-spangled Hamburgh); Gunson & Jefferson.

SINGLE GAME COCKS.—1 and Cup, H. M. Julian. 2, C. W. Brierley. 3, J. Bowness, Newchurch. *hc*, J. W. Will; M. Redhead, Kendal; W. H. Stagg, Netherayon; J. Brough. *c*, T. Mason. *Cockerel.*—1, J. Mashiter. 2, T. Whittaker. 3, J. D. Oates, Halifax. *hc*, H. M. Julian; W. H. Stagg.

GAME BANTAMS.—*Cock.*—1, S. W. Smith, Thrapstone. 2, T. Sharples, Rawtenstall. 3, J. Blamires, Great Horton. *hc*, G. Hall, Kendal; Bellingham and Gill, Burnley; W. Caton, Kirkby Lonsdale; J. R. Robinson, Sunderland; T. C. and E Newbitt; H. Beldon. *c*, W. Rogers, Sunderland. *Black-breasted or other Reds.*—1 and Cup, G. Hall, Kendal. 2, T. C. & E. Newbitt. 3, H. Beldon. *hc*, J. & W. Towerson, Egremont; S. W. Smith. *Any other Variety.*—1, T. Sharples. 2, T. C. & E. Newbitt. 3, J. Stabler. *hc*, H. J. Nicholson, Holborn Hill, Cumberland. *c*, J. Watts.

BANTAMS (Any variety, except Game).—1, M. Leno, Dunstable (Laced). 2, J. Walker, Halifax. 3, H. Beldon. *hc*, H. Yardley; M. Leno (Laced); Mrs. Arkwright (Gold-laced); W. J. Cope; J. Watts (2).

DUCKS.—*White Aylesbury.*—1, E. Leech. 2, J. Robinson. 3, W. Stonehouse, Whitby. *Rouen.*—1 and Cup, S. H. Stott. 2, A. Dickinson, West Croft. 3, R. Parkinson, Ulverston. *hc*, Mrs. Banks, Kendal; J. J. Waller; W. Willison, Kendal; W. Evans, Prescot; E. Leech; J. White; J. Newton. *Black East Indian.*—1 and 2, S. Burn, Whitby. 3, G. S. Sainsbury, Devizes. *hc*, G. Cartmel, Kendal; S. Burn. *Any other Variety.*—1, M. Leno (Mandarin). 2, C. W. Brierley. 3, H. B. Smith. (The whole class highly commended).

PIGEONS.—*Carrier.*—1, H. Beldon. 2, C. E. Stretch, Ormskirk. *hc*, W. Jackson; E. Horner, Harewood (2). *Tumblers* (Almond).—1, H. Yardley. 2, H. Beldon. *hc*, E. Horner. *Any Variety.*—1, F. Moore, Burnley. 2, T. Kew. *Owls.*—1, J. & W. Towerson. 2, H. Beldon. *hc*, A. Jackson, Bolton-le-Moors. *Pouter or Croppers.*—1, E. Horner. 2, T. Kew. *hc*, T. Kew; E. Horner. *Barbs.*—1, W. Jackson. 2, E. Horner. *Fantails.*—1, H. Yardley. 2, E. Horner. *hc*, J. F. Loveridge, Newark (2); J. Walker, Newark; J. W. Edge, Birmingham; H. Beldon. *Turbits.*—1 and 2, R. Thompson, Penrith. *hc*, J. & W. Towerson; E. Horner. *Trumpeters.*—1, E. Horner. 2, H. Beldon. *Jacobins.*—1, J. & W. Towerson. 2, R. Thompson. *hc*, R. Thompson; F. Moore. *Any other Variety.*—1, R. Thompson. 2, W. Jackson (Spangled Porcelains). *hc*, R. Thompson; H. Yardley; W. Bearpark, Aisdersby Steeple; H. Beldon; J. Watts; E. Horner.

LOCAL CLASSES.

GAME (Any variety).—*Chickens.*—1, 2, and *hc*, J. Barrow, jun. 3, Graham and Robinson, Kendal. *Pullet.*—1, A. Walker, Troutbeck. 2, W. Wells, Kendal. 3, Graham & Robinson. *hc*, J. Barrow, jun.

HAMBURGHS (Any variety).—*Chickens.*—1 and Cup and 2, W. M. Mann. 3, T. Stuart, Staveley.

SPANISH (Black).—*Chickens.*—1, 2, and 3, T. J. Harrison, Kendal. *hc*, J. P. Harrison, Kendal.

DORKINGS (Any variety).—*Chickens.*—1, R. D. Holt. 2, W. W. Ruttlidge. 3, Mrs. T. W. L. Hind.

COCHINS (Any variety).—*Chickens.*—1, R. G. Pears, Yanwath. 2, A. Fulton, Sedgwick. 3, G. Hall, Kendal. *hc*, J. Glessall.

BRAHMAS (Any variety).—*Chickens.*—1, A. Walker. 2 and 3, T. W. L. Hind. *hc*, J. Glessall.

BANTAMS (Any variety).—*Chickens.*—1 and 2, G. Hall. 3, J. Smith, Kendal. *hc*, J. Rauthmell, jun., Kendal; W. Caton, Kirkby Lonsdale (2).

DUCKS (Any variety).—*Ducklings.*—1, A. Walker. 2, J. J. Waller, Kendal. 3, R. Willison, Underharrow. *hc*, J. Banks, Kendal; R. S. Willison, Underharrow; A. Stuart.

TURKEYS.—1, T. J. Harrison. 2, C. W. Wilson, High Park, Kendal. 3, T. and G. Airey, Preston Patrick. *hc*, Mrs. Bindloss, Castle Green, Kendal.

GEESE.—1 and 2, R. Rawlinson, Kendal. 3, C. W. Wilson.

ABERDEEN POULTRY AND PIGEON SHOW.

THE Northern Poultry Club held their fifth annual exhibition on the 14th inst., in the Artillery Gymnasium, Aberdeen. There were 369 entries of Poultry, and 250 of Pigeons. The following awards were made:—

GAME.—*Cocks.*—1, A. Dewar, Linton, Cluny. 2, J. M. Campbell, Bonnykelly, New Byth. 3, W. Meldrum, Forfar. *hc*, J. Mollison, Ruthven, Meigle. *c*, J. Wood, Dunecht, Waterton of Echt. *Hen.*—1, J. Mollison. 2, W. Meldrum. 3, J. W. Will, Errol. *Chickens.*—1 and Cup, A. Dewar. 2, C. Jamieson. 3, J. Blair, Blairgone, Dollar. *hc*, W. Tosh, Forfar. *c*, P. Campbell, Oldwhat, New Deer.

SPANISH.—*Cocks.*—1, D. Normand, Kennoway. 2, T. Skinner, Woodside, Aberdeen. 3 and *c*, J. Wood. *Hens.*—1 and 2, A. Shepherd, Meigle. 3, J. Wood. *hc*, H. Yardley, Birmingham. *c*, W. Webster, Middlefield, Woodside. *Chickens.*—1 and Cup, J. Waddell, Airdriehill, Airdria. 2, Miss K. Douglas, Liberton. 3, W. Fraser, Kirkton, Durris. *hc*, W. Webster; A. Gibb, Panmure Fens, Broughty-Ferry; J. Morrison, Moroingside, Edinburgh.

DORKINGS (Silver-Grey).—*Cocks.*—1, Mrs. M'Donald, Forres. 2, Miss Swann, Douglas. 3, A. F. Williamson, Caskieben, Blackburn. *hc*, E. Taylor, Fichnie. *c*, D. Gracie, Stonehaven. *Hens.*—1, T. Raines, Bridge Haugh, Stirling. 2, D. Annan, The Torr, Moonzie, Cupar. 3, G. Black, Mill of Craibstone, Auchmull. *hc*, A. F. Williamson. *c*, Mrs. M'Donald. *Chickens.*—1, J. Waddell. 2, T. Raines, 3, D. Annan. *c*, J. Wood.

DORKINGS (Any other Colour).—*Cocks.*—1, Mrs. A. Bruce, Westhill of Airdrie, Meigle. 2, B. C. Urquhart, Meldrum House. 3, J. Clark, Fochabers. *Hens.*—1, A. Shepherd. 2, Mrs. M'Donald. 3, A. Haggart, Leslie. *hc*, Miss H. R. Lind, Ladieskford, Fraserburgh. *c*, L. M'Donald, Pitrodie, Errol. *Chickens.*—1 and Cup, A. Shepherd. 2, A. Bowie, jun., Carnonatie. 3, Mrs. M'Donald.

COCHIN-CHINA.—*Cock.*—1, B. C. Urquhart. 2, J. Pollock, Bushy, Glasgow. 3, W. Hendry. *Hens.*—1, 3, and Cup, Mrs. J. Wood. 2, T. M. Hendrie, Inverness. *hc*, A. Cowie, Cromblybank, Ellon. *Chickens.*—1, J. Wood. 2, T. M. Hendrie. 3, F. Downie, Aberdeen.

BRAHMA POOTRA.—*Cock.*—1, J. Wood, Dunecht, Watertown of Echt, Aberdeen. 2, D. A. Pearson, Johnston, Laurencekirk. 3, Capt. Bunter, Tillery. *Hens.*—1 and Cup, Mrs. Gillison, Milngavie, Glasgow. 2, T. Raines. 3 and *c*, Capt. Hunter. *Chickens.*—1, W. Harvey, Sheffield. 2 and *c*, Capt. Hunter. 3, J. Mackie, Ellon. *hc*, R. Brownlie, Kirkcaldy.

HOUDANS.—*Cocks.*—1, Mrs. Bain, Aberdeen. 2, J. Logan, Eastshield, Lanarkshire. 3, B. C. Urquhart. *Hens.*—1, J. Mackie. 2 and 3, Mrs. Bain. *c*, J. Logan.

HAMBURGHS (Gold or Silver-pencilled).—*Cocks.*—1, J. Will. 2, H. Pickles, jun., Earby. 3, J. M. Campbell, Bonnykelly. *hc*, A. Scroggie, Oldwhat. *c*, A. Mathers, New Pitsligo. *Hens.*—1 and Cup, A. Pratt, Kirkcaldy. 2, H. Pickles, jun. 3, G. Laing, Persley, Aberdeen. *hc*, R. Fraser, Woodside. *c*, P. Campbell, Oldwhat.

HAMBURGHS (Gold-spangled).—*Cock.*—1, H. Pickles, jun. 2, J. W. Will. 3, J. Thom, New Deer. *hc*, J. Campbell. *Hens.*—1, W. Abel, Buxburn, Aberdeen. 2, J. W. Will. 3, Mrs. Brown, Creiff. *hc*, R. Mearns, Aberdeen. *c*, H. Pickles, jun.

HAMBURGHS (Silver-spangled).—*Cocks.*—1, G. Caithness, Carnoustie. 2, H. Pickles, jun. 3, G. Campbell, New Pitsligo. *c*, J. M. Campbell. *Hens.*—1, H. Pickles, jun. 2, J. W. Will. 3, J. Logan. *c*, J. Annand, Stoneywood, Aberdeen.

ANY OTHER VARIETY.—1, H. Pickles, jun. 2, J. Logan (Crève-Cœur). 3, W. Harvey. *c*, B. C. Urquhart (La Flèche).

GAME BANTAMS.—*Cock.*—1 and Cup, J. W. Will. 2, T. Raines, Bridge Haugh, Stirling. 3, R. Brownlie, Kirkcaldy (Black Red). *hc*, J. D. Skeno, Queen's Cross, Aberdeen; Sir G. M. Grant, Ballindalloch; R. Frew, Sinclairton, Kirkcaldy. *c*, J. Dick, Dunphail, Forres (Black Red); T. Skinner. *Hens.*—1 and 3, R. Brownlie. 2, T. Raines. *hc*, J. Dick (Dorkings and Black Red). *c*, W. Horne, Buxburn, Aberdeen.

BANTAMS (Any other Variety).—1, T. Watson, Bridge of Earn (Gold-spangled). 2, Miss J. M. Frew, Kirkcaldy. 3, H. Pickles, jun. *hc*, J. Waddell. *c*, Master A. Frew, Kirkcaldy.

DUCKS.—*Aylesbury.*—1, J. W. Will. 2, S. Ford, Huntly. 3, Mrs. Hendrie. *hc*, A. Copland, Kintore. *c*, J. Clark. *Any other Variety.*—1 and 3, W. M'Knight, Boghead, Pitcaple. 2, A. Bowie, jun. *hc*, A. Valentine, Blackburn, Kinellar.

TURKEYS (Any variety).—1, Mrs. W. Auld, Nethermuir, New Deer. 2, J. Willox, New Deer. 3, J. Clark. *c*, Miss Taylor, Fichnie.

GEESE.—1 and 2, J. Logan. 3, J. Waddell.

SELLING CLASS.—1, L. M'Donald, Pitrodie, Errol (Dorkings). 2, P. Symon, Errol (Spanish). 3, A. Bowie, jun. *hc*, Mrs. Gillison; T. Gray, Fordyce, Portsoy; J. Clark. *c*, Mrs. Gillison; J. W. Will (Game).

PIGEONS.

POUTERS (Blue Pied).—*Cocks.*—1 and *hc*, J. Millar, Glasgow. 2 and 3, D. Stewart, Perth. *c*, G. Ure, Rosebank, Dundee. *Hens.*—1, 3, and Cup, G. Ure. 2, J. Miller. *hc*, D. Stewart. *c*, J. Hawley, Bingley.

POUTERS (Black Pied).—*Cocks.*—1 and *hc*, G. Ure. 2 and 3, J. Miller. *c*, J. Morrison. *Hens.*—1 and 2, J. Miller. 3, W. B. Van Haansbergen, Newcastle-on-Tyne. *hc*, G. Ure.

POUTERS (Red or Yellow Pied).—*Cocks.*—1 and *hc*, G. Ure (Yellow and Red). 2, J. Miller (Red). 3, J. Walker, Newark. *c*, W. B. Van Haansbergen. *Hens.*—1 and 3, G. Ure (Yellow). 2, J. Miller. *hc*, J. Hawley. *c*, W. C. Thomson, Broughty-Ferry (Red).

POUTERS (White).—*Cocks.*—1, J. Miller. 2, W. Rotherford, Edinburgh. 3, J. Grant, Edinburgh. *hc*, H. Yardley; J. Grant. *c*, J. Sharp, Johnstone. *Hens.*—1, J. Miller. 2, G. Ure. 3, J. Sharp. *hc*, J. Grant. *c*, F. M'Crae, jun., Aberdeen.

POUTERS (Any other Colour or Marking).—*Cocks.*—1 and *c*, J. Grant (Chequers and Mealy). 2, J. Morrison. 3, D. Stewart. *hc*, W. B. Van Haansbergen. *Hens.*—1, W. Rutherford, Edinburgh. 2, D. Stewart, Perth. 3, W. Moon, Edinburgh. *c*, R. T. Moon, Driffield.

CARRIERS.—*Cocks.*—1, 3, and Cup, W. Massie, Spalding. 2, H. Yardley. *hc*, T. W. Kilburn, Bishop Auckland. *c*, W. Hendry. *Hens.*—1, H. Yardley. 2, T. W. Kilburn. 3, W. Hendry.

SHORT-FACED TUMBLERS.—*Almond or Mottled.*—1, W. Harvey. 2, J. Hawley. 3, H. Yardley. *Any other Colour.*—1, J. Hawley. 2, F. M'Crae, jun. 3, W. Hendry. *hc*, J. Grant.

BARBS.—*Black or Dun.*—1, H. Yardley. 2, *hc*, and *c*, W. Hendry. 3, W. Massey. *Any other Colour.*—1, W. Massey. 2 and 3, W. Hendry.

FANTAILS.—1 and 2, G. Ure. 3, T. Rule, Gilesgate, Durham. *hc*, J. G. Spence, Edinburgh. *c*, A. Smith, Bronghty-Ferry.

JACOBINS.—1, W. B. Van Haansbergen. 2, J. Miller. 3, J. Hawley. *hc*, H. Yardley, Birmingham. *c*, T. Rule.

TRUMPETERS.—1, J. Miller. 2, J. Hawley. 3, T. Rule. *hc*, W. B. Van Haansbergen. *c*, T. Rule; J. Bawley.

TURBITS.—1 and 2, W. Hendry. 3, T. Rule. *hc*, W. B. Van Haansbergen. *c*, C. Anton, jun., York.

OWLS.—1, W. Harvey. 2, H. Yardley. 3, W. Goddard, Earlston.

NUNS.—1, F. Graham, Birkenhead. 2, T. Imrie, Ayr. 3, W. Symon. *hc*, W. B. Van Haansbergen. *c*, Master A. Ridpath, Edinburgh.

DRAGOONS.—1 and 3, F. Graham. 2, H. Allsop, Birmingham. *hc*, W. H. Mitchell, Moseley, Birmingham. *c*, W. Massey.

ANTWERPS.—1, H. R. Wright. 2, W. Hendry. 3, H. Yardley. *hc*, W. H. Mitchell, Moseley, Birmingham. *c*, T. W. Kilburn.

ANY OTHER VARIETY.—1, 2, and Timepiece, J. Miller. 3, J. Sharp, Johnston. *hc*, T. W. Kilburn. *c*, W. Goddard (Austrian Pouters (Black), and Ice Pigeons).

SELLING CLASS.—1, G. Ure (Red Pouter Cock). 2, W. Harvey, Sheffield. *hc*, J. Grant. *c*, — Hendry (Black Barb).

JUDGES.—For *Game*, *Dorkings*, *Brahmas*, *and Bantams*, Mr. John Anderson, Blairgowrie; for *Spanish*, *Cochin-China*, *Hamburghs*, *Ducks*, *Geese*, *and Turkeys*, Mr. Alexander Paterson, Airdrie; for *Pigeons*, Mr. M. Stuart, Glasgow.

BIRMINGHAM COLUMBARIAN SOCIETY'S SHOW.

THE sixth annual Show of this Society was held on the 19th inst. in the Town Hall Auction Rooms. There were seventeen entries more than last year. The competition was divided into two sections—viz., birds bred in 1870, and birds of any age.

In Class 1, young *Carriers*, a promising Dun was first, and a Black second; many fanciers thought these positions should have been reversed. Of Carriers of any other colour, a very promising bird was first, but sadly deficient in colour. In *Almonds* and *Short-faced*, a Yellow Wholefeather was first, a Kite second; an Almond and Red Agate were also shown. These four birds were good in head, eye, stop, bill, and carriage; in fact, such as might have reasonably been expected from the author of the article on the Almond in "our Journal." *Mottles* and *Rosewings* were good in marking. In *Jacobins* and *Trumpeters* there was no competition, so the prizes were withheld. In *Barbs* a very promising Black was first, and a good Dun second. *Dragoons* were a good class, White being first, Blue second, and Silver third. There were four of the latter colour in this class. Dun *Antwerps* were promising birds, also the Red Chequers, but the pride of place must be accorded to the first-prize Blue Chequer, by far the best bird in any of the classes. These classes did not present the severe competition that is usual at this Show through the strongest exhibitor having purchased the whole of the stock of Mr. Noyé, the rule of the Society being that all young birds must be bred by the exhibitor. The *Any other variety* class was a splendid one; Satinettes were first, Owls second, and the remainder consisted of Blue and Silver Swallows, Mains, and Baldpates.

In the division for birds of any age, in the class for *Carrier* cocks, Black or Dun, all the prize birds were Black. The first prize went to a wonderfully good-billed bird, the wattle of which was by many good judges considered perfection, narrow skull, eye wattle rather too small, good colour and carriage. For hens, Black or Dun, the first prize went to Blacks with good eyes, rather too light in bill, and looking rather overshown; second a Dun with a remarkably large eye, bill good, but not quite so straight as it ought to be. Of hens of any other colour, Blue, good in all points except colour, were first, Silver second, and White highly commended. This was the best-eyed bird of this colour seen for some time. *Pouter* cocks and hens call for no special remark. *Almonds* and *Short-faced Tumblers* were very good in every point, Almonds being first and Kites second. *Fantail's*, no competition. Of *Owls*, Blue English were first, and foreign Whites with black tails second. These should have been first, although the cock was deficient in frill. In *Mottles* and *Rosewings* the latter were first, a perfect match; Mottles second. A splendid cock was in this pair; the hen exhibited rather too much white. In *Saddles* and *Badges*, Blacks were first, Reds second and third, Blues highly commended. *Nuns* and *Archangels*, Black Nuns obtained all the honours. These were three grand pairs. *Barbs* good. Blacks obtained all the honours in this class also. *Dragoons.*—In Blue a splendid pair was first. In any other colour, Silvers were first and second, Yellows third. This was a grand class, all the winners were fully up to the standard set forth by the Society. Silvers and Whites were highly commended. Five pairs of the former colour were exhibited. *Antwerps* —Of Blue, a remarkably good pair were first, the others require age to mature them. Dun Antwerps were a strong good class, one exhibitor carrying off all the prizes, the portrait cock being in the first-prize pair. Blue Chequered were good and all well marked, all the prizes again falling to one exhibitor. Red Chequered Antwerps were well represented by some grand specimens.

The *Antwerp* cock class was the strongest in the Show, there being twenty-five pens. Duns were first and second; Blues third; Red Chequered and Blue Chequered were highly commended. A veteran eighteen years old was exhibited by Mr. Crosland in perfect health and condition.

In pairs of *Any other variety*, Brunettes were first, and had an extra prize given by the late Hon. Sec., Mr. Noyé. Blondinette Satin were equal first; Dentillettes and Silver Turbits equal second; Blue Turbits and English Owls were equal third; Blue Blondinettes and Turkish Rollers were highly commended. Eastern Blues, Satinettes, Mains, and Swallows composed the rest of the class. In the class for single birds, a Damascene was first, and a Blue Blondinette second. This specimen was in bad condition, or the positions would have been reversed. The bird is as small as an Almond, of a deep blue colour, with pink bars, and on the end of every flight feather is a spot of white the size of a horsebean, and every tail feather has the spot the same as the Satinette. A Red Barb was third. The remainder of this class was made up of a Swallow, Starling, Owl, Jacobin, Archangel, Magpie, and Capuchin.

The Variety classes were certainly the greatest attraction in the Show, and were well worth seeing, as most of the specimens sent over to England from Smyrna by Mr. Noyé were exhibited. Carriers, Almonds, Dragoons, and Antwerps were good, the latter especially so, as no exhibition as yet has produced such classes with such keen competition.

An Antwerp courier hen was exhibited as extra stock by Mr. Ludlow, the Secretary. She has won ten flying matches from Paris to Belgium, and is a remarkably good-looking bird. This is a proof that if the short, strong-billed Antwerps are trained from the nest they are as good flyers as their longer brethren.

In drawing these notes to a close, too much praise cannot be accorded to the Committee and members of this Society for the liberal manner in which they provide a show for public inspection, and give free admission to any respectable applicant, either by ticket or on production of his card. Upwards of three hundred tickets were taken at the doors, and fully that number of visitors were admitted without ticket. Such liberality ought to receive support, and many fanciers were surprised to hear that the Society was supported on so small a yearly subscription—namely, 6s.; the secret is, all are fanciers, all put their shoulders to the wheel, and therefore the expenses are small.

BRED IN 1870.

CARRIERS.—*Black and Dun.*—1 and *hc*, J. Watts, Hazelwell Hall, Birmingham. 2, H. Hallam, Lozells, Birmingham. *Any other Colour*—1, J. Watts.

ALMONDS AND SHORT-FACED TUMBLERS.—1 and 2, T. Hallam, Lozells, Birmingham.

MOTTLES AND ROSEWINGS.—1, E. D. Careless, Birmingham.

BARBS.—1, H. Allsop, Birmingham. 2, H. Hallam.

DRAGOONS.—1, J. Watts. 2, J. W. Ludlow, Birmingham. 3, H. Allsop.

ANTWERPS.—*Blue.*—1, J. W. Ludlow. *Dun*—1 and 2, J. W. Ludlow. *hc*, T. Marlow, Handsworth. *Red Chequered.*—1, J. W. Ludlow. 2, C. Copeman, Birmingham. *Blue Chequered*—1, 2, and *hc*, J. W. Ludlow.

ANY OTHER VARIETY.—1 and *hc*, W. Bankes, Runcorn. 2, J. Watts (African Owl).

ANY AGE

CARRIERS.—*Black or Dun.*—*Cocks.*—1, 2, and *hc*, H. Hallam. 3, J. Watts. *Hens.*—1 and *hc*, J. Watts. 2, H. Hallam. *Any other Colour.*—*Hens.*—1 and 2, J. Watts.

POUTERS.—*Cocks.*—1 and 2, J. Watts. *Hens.*—1 and 2, J. Watts.
ALMONDS AND SHORT-FACED TUMBLERS.—1 and 2, T. Hallam.
FANTAILS.—1, J. Watts.
OWLS.—1, J. Crosland, jun., Wakefield. 2, J. Watts.
MOTTLES AND ROSEWINGS.—1 and 2, E. D. Careless.
SADDLES AND BADGES.—1, 2, 3, and *hc*. G. Gordin, Handsworth.
NUNS AND ARCHANGELS.—1, 2, and 3, W. Baukes (Nuns).
BARBS.—1 and *hc*, H. Allsopp. 2, J. Watts.
DRAGOONS.—*Blue.*—1, G. Green, King's Heath, Birmingham. 2, J. Watts. *Any other Colour.*—1 and 2, H. Allsopp (Silver). 3, J. W. Lndlow (Yellow). *hc*, H. Allsop (Silver); H. R. Wright, Hockley, Birmingham.
ANTWERPS.—*Blue.*—1, H. R. Wright. 2, J. W. Ludlow. 3, J. Watts. *Dun.*—1, 2, and 3, H. R. Wright. *hc*, J. W. Ludlow. *Blue Chequered.*—1, 2, and 3, J. W. Ludlow. *hc*, H. R. Wright. *Red Chequered.*—1, H. R. Wright. 2 and 3, J. W. Ludlow. *Cocks* (Any variety).—1 and 2, H. R. Wright. 3, J. Watts. *hc*, C. Copeman (2); H. R. Wright.
ANY OTHER VARIETY.—*Pairs.*—1, 2, and 3, W. Bankes (Brunette, Blondinette, Blue and Silver Turbits, and English Owls). Equal 2, J. Watts (Dentillettes). *Single Birds.*—1, J. W. Ludlow (Damascene). 2 and 3, H. Allsop.
TUMBLERS (Clear-legged).—1, E. D. Careless.

DUMFRIES AND MAXWELLTOWN ORNITHOLOGICAL SOCIETY'S SHOW.

THE twelfth annual exhibition of Poultry, Pigeons, and Canaries took place in the Mechanics' Hall, Dumfries, on the 17th and 18th inst.

In number of entries the Show was considerably behind that of last year, but in respect to superior quality the exhibition was one of the best, if not the very best, the Society has had. The arrangements were excellent, and reflected great credit on the committee of management, and the indefatigable secretary, Mr. John Maxwell. A very noticeable feature in the prize-cards was a new form of card for the first prizes in the Poultry classes. A very tastefully designed card has the particulars and class, and the date of the Show printed in gold on the margin, which is crimson or blue morocco leather. In the centre of the card is a beautifully executed coloured specimen of the class of bird for which the prize-card is intended.

The following is a comparison of the entries:—

	1870.		1871.
Poultry	229	Poultry	172
Ducks	31	Ducks	16
Bantams	67	Bantams	43
Pigeons	77	Pigeons	73
Cage Birds	129	Cage Birds	88
	533		393

The competition in Pigeons was nearly equal in the number of entries to the Show of last year, and in regard to quality was first-rate, as in some of the classes nearly the whole were highly commended. Of Carrier Pigeons there were five entries, and this class commanded a good deal of attention, the interest being, doubtless, stimulated by the feats which these swift-winged messengers are now doing at Paris.

Of cage birds there was a great falling-off in the entries, the number being 88 against 129 last year. Some of the Dumfries Canary champions were fairly beaten on this occasion, even the redoubtable James Thorpe, having only succeeded in gaining two first prizes and five seconds out of sixteen entries. Only four other prizes were gained by competitors in Dumfries and Maxwelltown. The rest of the prizes were won by exhibitors from a distance. The first-prize Goldfinch Mule was said by the Judges to be the finest specimen of its class they had ever seen.

GAME.—*Black Reds, Blacks, and other Reds and Blues.*—1 and 2, J. Brough Carlisle. *hc*, F. W. Thwaites, Carlisle; T. West, Eccleston, Lancashire *Chickens.*—1, J. Brough. 2, J. Harding, Dumfries. *hc*, D. Hardie, Priesthangh Hawick. *Duckwings, Whites, and others Greys.*—1, J. Brough. 2, R. W M'Cracken, Thornhill. *hc*, D. Harley, Edinburgh. *Chickens.*—1 and *hc*, T Davidson, Longton. 2, D. Harley.
DORKINGS.—*Silver-Grey.*—1, J. Cunningham, Dalbeattie. 2, A. Skirving, Croys, Dalbeattie. *hc*, Com. G. F. Lyons. R. N. Kirkmichael; R. Reid, Hollinhirst, Canonbie. *Chickens.*—1, J. Thomson, Blaiket. 2, Mrs. Hume, Auchendolly, Castle Douglas. *hc*, Miss M. Johnstone, Terregles; Miss M'Holme, Troqueer; D. Hardie. *Any other Colour.*—1, R. Reid. 2, D. Hardie. *hc*, A. Shepherd, Meigle. *Chickens.*—1, Mrs. J. Bell, Hillowtown, Castle Douglas. 2, R. Reid. *hc*, A. Shepherd.
SPANISH.—*Black.*—1, A. Shepherd. 2, W. Paterson, Langholm. *hc*, H. Wilkinson, Earby. *Chickens.*—1, W. Paterson. 2, H. Wilkinson. *hc*, A. Walker, Kilmarnock; A. Shepherd.
COCHIN-CHINA.—1, Lady J. J. Douglas. *hc*, J. Waddell, West Derby. *Chickens.*—1, Lady J. J. Douglas. 2, Com. G. F. Lyon. *Any Colour.*—1, Mrs. G. Dart, Acrehead, Dumfries. *Chickens.*—1 and 2, J. B. Storey, Milnhead, Dumfries. *hc*, Mrs. Parker, Coalstaith, Brampton.
BRAHMA-POOTRA.—1, A. Hutchinson. Stranraer. 2, Com. G. F. Lyon. *hc*, Miss Drummond, Errel, N.B.; J. Cowman, Whitehaven *Chickens.*—1 and 2, J. Cowman. *hc*, J. Pearson, Castle Douglas; Com. G. F. Lyon.
HAMBURGHS.—*Golden-spangled.*—1, H. Pickles, jun. 2, R. Dickson, Selkirk. *hc*, E. J. Jones. *Chickens.*—1, J. Holburn, Stewarton. 2, R. Mackie, Stewarton. *hc*, T. Jardine, Lockerbie. *Silver-spangled.*—1, H. Pickles, jun. 2, S. & R. Ashton, Mottram *Chickens.*—1, Ashton & Booth, Broadbottom. 2, H. Pickles, jun. *hc*, J. Gibson; J. Douglas, Glencairn. *Golden-pencilled.*—1. H. Pickles, jun. 2, J. Holburn. *hc*, J. Musgrave, Longtown. *Chickens* —1, J. Nicholson, jun, Carlisle. 2, H. Pickles, jun. *hc*, J. Armstrong, Longtown; W. Bachop, Stonefield, Paisley; A. Crosbie, Melrose. *Silver-pencilled.*—1 and 2, H. Pickles, jun. *hc*, Mrs. J. Pool. *Chickens.*—1 and 2, H. Pickles, jun. *hc*, J. Holburn.
ANY OTHER VARIETY.—1, H. Pickles. jun. (Polands). 2, J. P. Fawcett, Whithy (Black Hamburghs). *hc*, Com. G. F. Lyon (Houdans); Mrs. Hume (Houdans); A. Crosbie (Crève Cœur).
SELLING CLASS.—1, W. Paterson, Langholm (Spanish). 2, J. Cunningham (Dorkings). *hc*, W. Linton, Selkirk (Crève-Cœur).
BANTAMS.—*Gold and Silver-laced.*—1, Master A. Frew, Sinclairtown, Kirkcaldy. 2, Master J. D. S. Crawford, Kilbarchan. *hc*, J. G. Orr, Beith. *c*, J. Robertson, Lochmaben. *Black.*—1, S. & R. Ashton. 2, H. Pickles, jun. *hc*, D. Hardie; A. Walker, Kilmarnock. *White.*—1, S. & R. Ashton. 2 and *hc*, J. Gibson, Castle Douglas. *Game.*—*Black Reds and other Reds.*—1, R. Green, Lochmaben. 2, J. Waddell. *hc*, J. Meikle, Stranraer. *Duckwings and other Greys.*—1, Miss B. P. Frew. 2, W. Scott, Jedburgh. *hc*, Miss R. C. Frew.
DUCKS.—*Aylesbury.*—1, D. Hardie. 2 and *hc*, Com. G. F. Lyon. *c*, Mrs. J. Bell. *Rouen.*—1, J. Thomson. 2, Com. G. F. Lyon. *hc*, D. Hardie. *c*, D. Hardie; E. J. Jones. *Any other Variety.*—1, S. & R. Ashton (Carolina). 2, F. E. Schofield, Morpeth (Black East Indian). *hc*, Com. G. F. Lyon.
PIGEONS.—*Pouters.*—1, J. Waddell. 2 and *c*, G. R. Phillips, Ayr. *hc*, G. J Dart. *Carriers.*—1, J. Mair, jun., Kilmarnock. 2, W. Taylor, Durham. *hc*, G. J. Dart. *c*, J. G. Orr, Beith. *Fantails.*—1, J. Douglas, Thornhill. 2 and *hc*, T. Wilson, Stewarton. *c*, A. Crosbie. *Tumblers* (Short-faced).—1 and 2, T. Wilson. *hc*, Miss M. Douglas, Thornhill. *c*, J. Turner, Dumfries. (Common). —1, G. R. Phillips. 2, J. Arnott, Dumfries. *hc*, J. Wilson. *c*, E. M'Kie, Dumfries. *Barbs*—1 and *c*, G. J. Dart. 2, W. Taylor. *hc*, J. Mair. *Jacobins.*—1, T. W. Kilburn, Bishop Auckland. 2 and *hc*, T. Rule. *Trumpeters.*—1 and 2, T. Rule. *hc*, T. W. Kilburn. *c*, J. G. Orr. *Turbits.*—1, Master R. Frew. 2, J. Waddell. *hc*, A. Crosbie. *c*, T. Rule. *Any other Variety.*—1, A. Crosbie (Letz). 2 and *hc*, G. P. Philips (Magpies).

CANARIES, &c.

SCOTCH FANCY.—*Yellow.*—*Cocks.*—1, R. Bryden. 2 and 3, T. Scott, Carluke. *Hens.*—1, J. Thorpe. 2, T. Scott. 3, W. Welsh, Dumfries. *Buff.*—*Cocks.*—1 and 3, T. Scott. 2, J. Thorpe. *Hens.*—1, T. Scott. 2, J. Thorpe. 3, J. M'Quhae, Maxwelltown.
PIEBALD.—*Yellow.*—*Cocks.*—1 and 3, T. Scott. 2, D. Gibson. *Hens.*—1 and 2, T. Scott. 3, J. Knocker, Southwick. *Buff.*—*Cocks.*—1, T. M'Millan, Wishaw. 2 and 3, T. Scott. *Hens.*—1, R. Bryden. 2, T. Scott. 3, R. M'Innes.
GOLDFINCH MULES.—*Yellow.*—1 and 3, J. Coupland. 2, J. Thorpe. *Buff.*—1, A. Law. 2, J. Little. 3, W. M'Donald, Newabbey.
GOLDFINCHES.—1 and 2, J. Thorpe. 3, A. Martin, Castle-Douglas.

JUDGES.—*Poultry:* Mr. R. Teebay, Fulwood, Preston. *Pigeons:* Mr. J. Huie, Glasgow. *Canaries:* Mr. W. Allison, Glasgow, and R. Crawford, Kilbirnie, Ayrshire.

THE SCOTTISH COLUMBARIAN ASSOCIATION, EDINBURGH.

(*Concluded from page* 40.)

IF the Pouter classes at Edinburgh manifested the constancy of the Scotch fancier, no less did the other varieties demonstrate his versatility. These appeared in numbers but little inferior to the late Glasgow gatherings, and in quality fairly representative—facts the more encouraging seeing how closely the Exhibition followed upon those of London and Birmingham. It will not savour of indifference to the general classes, whose characteristics are so often discussed, to single out Fantails for honourable mention. They indeed are rapidly becoming a speciality, only second to Pouters, with fanciers north of the Tweed, whose taste has led them to the cultivation of those smaller varieties endowed with so many graces of form, carriage, and gesture, and differing in many essential respects from the woodcut in a late number of this Journal. The unrivalled excellence and charm of the Fantails were generally admitted; their unceasing tremulousness so desired by competitors, and their dainty, tiptoe, gyratory motion, exciting amongst visitors the liveliest curiosity, and in some an almost pitying wonderment. Few could be persuaded that these highly valued properties were natural ancestral features, and those who conceded that possibility evidently cherished the conviction that Darwinian principles must at some time have got into strange alliance with habits of the "Grecian bend" order. If it would not seem hypercritical, exception might be taken to the provision of separate classes for young birds as superfluous, and to the small number of coloured specimens appearing—a deficiency, however, to be easily rectified, but at no sacrifice to the peculiarities so apparent in the Whites. Both the President and Vice-President have long been leaders in the endeavour to popularise the Fantail classes, and both must have been gratified with the success now recorded, quite irrespective of their honours as prizetakers.

The prize list, already published in full, included many new and welcome names in addition to those of familiar note, and the judgment was entrusted to Messrs. Corker and Wolstenholme, who, with that fatality which so frequently clings to the office of judge, were fettered in their labours to the loss of some four or five hours of precious daylight. The maturity of every arrangement could not reasonably be expected on a first occasion, but, with experience gained, the Association must be among the first, by stringent measures, to protect both judges and competitors from prejudice; and in a place of such accessibility as Edinburgh no excuse must be admitted for late arrival of birds, especially in the case of local exhibitors. Of the awards themselves, it must ever be borne in mind that in any show of sterling quality many birds of great stud value will remain unplaced; and although first prizes should proclaim the "Derby cracks" for the year, yet secondary awards in some cases may stand on a similar level of merit, the placing indicating no more than the tendency of taste in the judges for the time being.

Future Prospects.—This, the first show of the new Association, cannot be dismissed without some general and anticipatory remarks. The change from Glasgow to Edinburgh for the annual Scottish tournament was admittedly an experiment, but one more than justified by the event. It implies no disunion amongst the competitors themselves, but rather is the natural outcome of their growing interests. In short, the Edinburgh public has proved so sympathetic, that what before was compassed by the arduous and costly effort of the fanciers alone will in future be accomplished with all the advantages of external support and appreciation; for after an exhibition so pleasantly inaugurated Edinburgh will look forward to a yearly renewal of the gratification, while that capital better meets the convenience of southern friends, who are ever cordially welcomed across the border.

Whatever may be the plans under discussion for future adoption, there is a path open to the Scottish Columbarian Association especially worthy of its notice, and more than suggested by the estimation now attaching to the fancy Pigeon interest. For some years Scotland has

led the van in the superior arrangement and conduct of competitive exhibitions, and while Edinburgh displays an unflagging zeal in the same direction, much may yet be done to develope the art of exhibiting, to infuse into public shows a character of refinement, and to excite a higher regard for tasteful surroundings, particulars in which the Association has considerable opportunity for distinguishing itself and of becoming an influence for good. And in such a care for externals a harmony may be discovered, for the culture of fancy Pigeons strongly appeals to the artistic sense. Without taste, without nice perception, without superior powers of discrimination and comparison, as well aspire to be an artist of distinction as a successful fancier, no matter what the variety selected for cultivation.

Tasteful and appropriate exhibition arrangements should follow as by natural sequence; and shows ambitious for national or metropolitan distinction, so far from being behindhand in such matters, must set the fashion. Edinburgh has begun well, and seems thoroughly to understand, in common with the National Peristeronic Society and the London Exhibition Committee, that the arena of competition, the furnishings, the style and distribution of the pens, the care bestowed upon the birds, and, pre-eminently, the comfort and convenience of the visitors, are all elements for good or for evil, and greatly influence the public. The adoption and maintenance of worthy exhibition surroundings will not fail to have a favourable reaction on the birds. Competitors will more than ever realise the importance of bringing their birds to exhibition in "race horse" condition—bright, sleek, and sound, and by sheer contrast a death blow will be dealt to that jaded, overworked, and bedraggled appearance which is the very negation of the artistic or the refined.

Directing attention, therefore, to the "internal" rather than the "local" surroundings as most concerning the fancier, the Scottish Columbarian Association, in conclusion, may be congratulated on its merited success, and may be commended to a further development of those exhibition refinements so consonant with the pursuit as an art, and so appealing to the uninitiated.—W. Volckman.

A PIGEON FANCIER'S NOTES BETWEEN BIRMINGHAM AND SMYRNA.

I am at Smyrna, after fifteen years' life in good old England the memory of which I shall cherish for life, while I will retain, so far as it depends on myself, the friendship and brotherly love of those I proved true, looking with joy at their portraits, and the souvenirs they have honoured me with. I embraced the first opportunity of fulfilling what I promised to my fellow columbarians, and shall always be ready to forward all I consider desirable acquisitions to my fellow fanciers at large, on condition that orders from unknown correspondents must be endorsed by the approval of the Editors of this Journal, or my successor, Mr. J. W. Ludlow, Edward Place, Vauxhall Road, Birmingham.

Commencing to sketch my journey, the first country I entered on leaving England was Belgium, the mother of the Antwerps. What a chance, I thought, to stay in Brussels till the Pigeon market-day (Sunday), to see if I could procure any suitable specimen of this fast tribe, to send to my Birmingham friends for crossing purposes? I visited the market, which was very largely attended, being the day of the Belgian Independence, but in vain, as there was not one bird worthy of my purpose. I witnessed the departure of nearly all the birds from the cages of their owners, who liberated them to lighten their burden homewards, and immediately afterwards I took my departure through Germany (sadly interrupted by the various trains to and from the seat of war), for the Austrian capital, in which I stayed long enough to see if I could find there any acquisition of Pouters (pigmy), as it is of no use to look for improvement upon the specimens in the possession of our Scotch and English fanciers. There were some pretty birds of this tribe, but I was advised not to risk sending them, as it was not very safe for human beings to find their way through Germany, much less birds. Losing all hope, I resumed my journey by train, then by the romantic Danube, and then by the Varna railway to Varna, and from Varna through the Black "frightfully Black" Sea, to Constantinople, the most noble and beautiful city in the world seen from a distance, but the most filthy and barbarous in itself! Here I found a few pretty birds, but knowing that I was going to their birthplace, where I had, seventeen years ago, known the most beautiful of all Toy Pigeons, including the exquisite Satinette, which I extensively introduced then, I passed them, and resumed my journey. Arriving in Smyrna, I commenced at once inquiries for my old friends and fellow fanciers, in the absence of Pigeon dealers; but, alas! few—very few—of my old friends are left. I contrived, however, within a month to procure twenty-four pairs of new varieties—Toy birds—and forwarded them by the steamer direct to Liverpool, for my friend, Mr. Ludlow, to be disposed of to members of our Society, and I am gratified to find the result was all I could wish. I intend to send in my next communication full descriptions of the birds I sent, and of those existing in this part of the world.—H. P. Caridia, *Smyrna*.

BIRMINGHAM MUFFED TUMBLERS.

I beg to convey through your Journal my thanks to the Birmingham Columbarian Society for the additional information relative to these Tumblers, contributed in reply to my own observations; and I have to acknowledge the compliment of the very explicit nature of this information upon peculiarities the Society state to be not worth mentioning, since exemplified at any Pigeon shop—in Birmingham, I assume—by birds sold at the cheap rate of 10s. per dozen. As I do not frequent the Birmingham Pigeon shops I feel favoured by this intimation, and hope it may not be profitless to myself and other strangers to the Birmingham mart, curious as to the blood of the Tumblers confessedly exhibited and identified with the Tumblers the subject of our notice. The summary, if I understand the Society, is that birds with the clear and muffed legs and the odd eyes do appear in the broods from parent birds the opposite in each peculiarity, or in apparently reverse relation of parents to offspring; and that the diversity of clear and muffed legs is to be attributed to a back cross of the Long-muffed with the Clear-legged Tumbler to break or diminish the muff of the progeny. Thus, that extreme variations of leg occur —*i.e.*, a clear, a diminished, and a long muff, from the same parentage, though such parentage be diverse itself, and so betrays its own pedigree of the back cross inferred; but that the odd eye is a mystery, and called a "bull eye," and is black, and not hazel, as stated by me, which eye—the evil eye—the Society, however, will "get rid of" as soon as practicable. Very well. The Society will forgive me repeating, though, that this odd eye is hazel—*i.e.*, the iris is hazel and the pupil black, else my own eyes are "colour-blind"—an infirmity the Society will pardon me the vanity of repudiation. Precisely as the gravel or pearl eye is so termed from the colour of the iris, so is the odd eye in question, from its iris, properly called a hazel eye. Substantially, therefore, the Society and I are agreed upon the peculiarities I submitted to be omitted in a former contribution from the Society, and now amply supplied.

The Society complains rather jealously and testily of some who would "anathematise" the Muffed Tumbler, and very rightly retorts that it would be wiser to "improve" this Tumbler until of the excellence in size and shape of young England's standard bird—our old English Tumbler. And so should I, as an Englishman, like to see the Muffed Tumbler a model bird of its class, for already I am proud to affirm that my own Tumblers of this variety, not "Pigeon-shop" birds, are no despicable specimens, nor aught loth to show their mettle by flights sky high and acrobatic gambols, the admiration of the neighbourhood. The Society, too, I must not omit to notice, now challenges comparison with our English Tumbler, in picked birds, in round "Brummagem" style and excusable laudation of its own ware.

I will try to approach the standard of the old English Sky Tumbler by another cross over to young England's fancy, so as to preserve the muff and retain the spirit of the Birmingham and old English Sky Tumbler in the progeny. The present Birmingham Muffed Tumbler comes from Continental or European (be it Dutch or German) ancestry doubtless, but grafted on our own stock of English blood, it will neither belie nor disgrace its family tradition.—Reader.

P. S.—The hazel eye is very likely transmitted from a hazel-eyed Bald, or a Magpie with dark eyes, crossed for flight in the former, and feather in the latter bird, or they may be accidentally so crossed.

COLCHESTER AND PORTSMOUTH RABBIT SCHEDULE.

I am surprised to find that the fancy variety men who have written so much upon the injustice done to the variety classes at most shows, should now praise the one-sided schedule of the coming Colchester Show. The sum of £12 is offered in prizes, only £3 going to the Lop-ears, the other £9 going to the fancy varieties. The extra weight to be paid for in carriage to and from the show will be double that of the single fancy Rabbit. Let us compare the two varieties. The very best fancy Rabbit there is you can buy for £2 or under, but to purchase a good Lop-eared Rabbit you must give from £5 to £10; also, there is no difficulty in breeding a good fancy Rabbit, but you may try for years before you can breed a good Lop-eared Rabbit. I contend that on account of value alone, the Lop-ears should always take the preference in a schedule, but at the same time I would do justice to the variety classes. But Mr. Hudson has just shown us he would do the opposite. Of the two schedules, I maintain that that of Portsmouth is the better. The Colchester Committee will find out their mistake when the entries close.

If the Rabbit fanciers of England would have the whole matter put on a just level, they must co-operate, and neither side should try to swamp the other. I have often thought it would be a good plan to have a "United Kingdom Rabbit Club" formed, say each member to subscribe 1s. a-year; to appoint a secretary to correspond with each poultry show committee, to suggest classes for the shows, and attend

to the interest of the Rabbit fanciers. If something of this kind were carried ont, it would, I doubt not, put an end to all jealousy betwixt the various fanciers, and they would increase both in numbers and respectability.—M. Millington, *York*.

SILVER CUPS AT THE CRYSTAL PALACE CANARY SHOW.

What does it mean when yon are told to "wire in?" Is it an electrical, mechanical, physical, or mental operation? I can find it in no dictionary, not even in the newest claiming to have some thousands of new words, nor in any published list of obsolete terms. I am told it is an English way of rendering a common expression found in I forget what language (but it is written in characters about as legible as those mysterious Arabian-Nights-looking blotches on tea chests), and is a verb neuter, signifying to eet about a thing with energy, but that it conveys more meaning than words can tell, something like our word "humbug," than which a more expressive word we have not.

In the columns of "our Journal" there is to-day a statement from "Yours ever, H. A." respecting the above, from which will be seen what is intended to be done. The cups can all be raised if the snpporters of each division to which a cup is appropriated will only "wire in." Isn't it a famous word? I have the Belgian piece of plate in hand, and if Belgian fanciers will at once send in their donations to me, or, better still, direct to Mr. Ashton, their cup can soon be made a certainty. I am aware that the classification of the Belgians is neither on so extended a basis, nor have they so liberal a prize scale, as more favonred varieties have extended to them; but the indifference of exhibitors is to blame for this, as I am sure a proper representation made in the proper quarter would remedy this defect. This should not deter any from subscribing a mite, but all should "wire in" with a will, and snpport what is undoubtedly the show of shows, and by a display of enthusiasm induce Mr. Wilkinson to make such an alteration in the schedule next year as will meet the views of all classes of exhibitors.

Mr. Stansfield, of Bradford, who has the Mule cup to fill up, writes me he has about a hundred names on his list. Well done! I can only repeat my sloggan "Wire in," and most likely you will have enough for two cups, which assuredly there should be, noless Jonques and Mealies are to be weighed in an even balance irrespective of colour. And the "Any other variety" class, containing as it does most extraordinary hybrids, will it have a separate cup? If ever a man had a "call" (I think that's the right word), a call to "wire in," Mr. Stansfield is the man, and the "Any other variety of Mnle" class is his field of labour.

Remember, all who are collecting for cups, the Show will open on February 11th—that is, in a fortnight; and you, whose name is legion, who intend to respond to "Yours ever, H. A.," in this movement, send in your donations at once, that on the opening day the cnps may decorate the table in the snng little corner behind the door of the tropical department.—W. A. Blakston.

As the Crystal Palace Canary Show is now not very far distant, allow me through your valuable paper to inform Canary fanciers that I am again trying to raise money for silver cups, as last year; bnt as the time is so short I have, instead of doing it all myself, asked different fanciers to take a class each, and the following have most kindly consented:—Mr. Blakston for Belgians, Messrs. Moore and Wynne for Norwich, Mr. Stansfield for Mnles, Mr. Waller for London Fancies, Mr. Harrison (I think), for Cinnamons, and myself for Lizards. I hope that all intending exhibitors will not delay, but send in their names and the amount they wish to snbscribe at once. I think those who won cups last year ought certainly to subscribe this year.—Howarth Ashton, *Polefield Hall, Manchester*.

Northampton Poultry Show.—Your readers will see by an advertisement in this Journal, that we hold our second annnal Show on the 8th and 9th of March. About fifty classes will be open for competition—twenty-five for poultry, and the remainder for Pigeons and Rabbits. The prizes will be uniform throughout, unless any special prize be subscribed for. We have introduced a class for Malays, and hope breeders and admirers of this class will snpport us. We can at present afford only two prizes for the best and the second best cock and hen, but we think it needs only to be mentioned to bring us sufficient to snpport the class with four prizes—viz., for the best and second best cock, and the best and second best pair of hens, the same as in our other classes for large fowls. In the Pigeon classes there will be two classes for Poutere instead of one, and the same for Carriers.—William Humphreys.

FOUL BROOD.

To the controversy so ably carried on by Mr. Lowe and the "Devonshire Bee-keeper," seven years ago, we are indebted for much of the valuable information that has appeared in the pages of "our Journal" on the subject of foul brood. The former never had any experience of the complaint, and believing that bees enjoyed immunity from anything of the nature of an epidemical visitation, endeavoured to show that all the evils complained of by the latter might be traced to an improper interference with hives, whereby the young larvæ were killed and left to rot in their cells. In elucidation of his views he drew an amusing picture of the doings of experimentalists, but in writing that article, which bore all the features of a caricature, I am well assured he had not the slightest intention of giving offence to anyone. Taking it for granted that the laws of Nature had been violated, and that the appearances which presented themselves in Mr. Woodbury's apiary were due, not to the presence of disease proper, such as scarlet fever or small pox, but to some evil or defect artificially created, he intimated that health would certainly be restored by complete excision of the affected parts.

The question, therefore, in the first instance, to be solved was this, Is foul brood a real disease, a spreading epidemic, and infectious? or is it merely an artificial malady, caused by chilled and dead larvæ, and one that can be eradicated by a simple removal of the evils introdnced? To determine this point certain experiments were undertaken, which have been detailed in the Journal, and I think it was clearly proved in the cases described that foul brood was communicated by infection, that it found its way into hives where no chilled and dead larvæ were previously present, that it could not be cured by any amount of excision of the tainted combs, and that it was a true disease—a pestilence extending itself—and as contagious as any which afflict the human family.

Now I, for one, will not charge Mr. Lowe with either ignoring or disbelieving the evidence adduced on the subject, although he may not have stated in the Journal that he is completely satisfied with the proofs that have been offered. If I mistake not he is ready to assent to the view that foul brood is of the nature of a pestilence, infectious, and incurable by excision, and wishes us to regard his present contention as relating entirely to its causation or origin. It has been shown by Mr. Woodbury and others that chilled brood, even in a putrefying state, when placed in a hive does not necessarily produce disease; but whilst accepting the fact, and also admitting that in the summer season a strong swarm will speedily clear out all decaying larvæ, I yet do not think I am precluded from holding the view that putrescent matter may have much to do with the introduction of foul brood into our hives.

The theory which finds most favour at the present time is that which ascribes putrefaction to the presence of living organisms developed from germs floating in the atmosphere. In the dead subject these microscopic objects find a suitable nursery for their propagation; and I can conceive that under peculiar conditions of temperature, moisture, &c., and whilst they are being developed, there may be evolved an element of destruction—call it a virus, if you like—which, fastening upon young larvæ and killing them, may produce putrefaction of a specific character, or true foul-brood corruption. It may be said that no such metamorphosis in the character of putrefaction has ever been witnessed, and that a corruption which is infectious has not arisen from corruption non-infectious. Well, fever may not be directly caused by filth, but the disease is, nevertheless, frequently generated amid unsanitary conditions. There seems to be no reason for thinking that some particular combination of elements may not give rise to diseases of the zymotic class, although their prevalence in any locality may often be due to infection or contagion. It is said that true Asiatic cholera, without infection being present, spontaneously arose in the House of Industry, at Coventry, in 1838, and many are of opinion that this fell plague has its origin in the exhalations arising from animal and vegetable matter in a state of decomposition. Now, when making some remarks on the theory of Dr. Preuss I stated "with a *caveat*" that there appeared to be some cases of weak hives that were healthy allowing in spring or autumn chilled brood to decay in the cells without any attempt to remove them, and that injurious results had followed the use of combs from which putrid larvæ had been extracted. But I am not satisfied yet with the proof I possess, and I would be glad if any apiarian who has made observations on the point, would record his experience.

In regard to the cure of foul brood, there can be no doubt that chloride of lime has sufficient power to cope with the fatal influence, whatever that may be. It was used with complete success by the "Devonshire Bee-keeper," in the purification of his boxes, and his facts have been fully corroborated. It cannot, then, be said we are still without a remedy, but we would like to know of an agent that we can make use of for

disinfecting the combs. Dr. Abbe informs us that it may be done by means of hyposulphite of soda.

As to overheated and suffocated brood causing disease, which is the doctrine advocated by "A Renfrewshire Bee-keeper," I can say little, having had no experience in the matter; but if bees are up to the mark it is difficult to see why they should permit dead larvæ, during summer weather, to rot in the cells without making a hasty and determined effort to remove them. Perhaps I am wrong in supposing they are not removed, for it is not to the presence of decaying bodies but to the mixing of condensed moisture with unsealed honey that evil is ascribed; but I would respectfully ask whether it is the case that honey in a hive so mixed with moisture ferments, and whether it is found by experience that fermentation is a consequence of mixing sealed with unsealed honey?

I do not remember witnessing the facts stated, nor have I seen honey in the unsealed cells covered with a white mouldy fungus, although I have seen the fungus often enough in cells containing bee-bread. In a wet season the honey collected abounds in water or moisture, but it does not ferment.—R. S.

OUR LETTER BOX.

Inquiry (*W. M., A. F., and Others*).—We are glad that most of you escaped by wisely requiring references or prepayment. With those who sent their fowls and have not been paid for them we cannot sympathise. If a post-office order payable ten days after date were required to be sent before the birds were forwarded, both seller and purchaser would be protected. Payment could be stopped if the birds were not approved. It may be useful to observe that the party who applies for birds but will not prepay, writes from various places—Aldgate, Wild Street, Culford Road, &c.

Bristol Poultry Show.—"In the report of this Show inserted in the Journal of January 12th, of Dark Brahma hens, it is stated, 'The cup was taken by the first-prize Birmingham hen, though only highly commended at Manchester the week before; such is the uncertainty of judging.' This is not correct, the Birmingham first-prize hens were not shown at Bristol. The hens that won the cup at Bristol were the same pair that won the first prize at Manchester, so that the uncertainty of judgment belongs to your reporter.—Richd. Teeday."

Best French Fowls (*E. V. O.*).—Beyond doubt we should recommend you the Crève-Cœurs. They are the best French fowls. They are more civilised than the Houdans, and their eggs are one-half larger than they are. You can keep a sufficient number of breeding birds in the space you name, to exhibit with such success as their quality may warrant. There will be nothing in the locality in which they are kept or its space to prevent it, but you will not find it large enough to rear chickens.

Malay Characteristics (*Yorkshire*).—Where all the points and characteristics of a fowl are required, we can hardly spare the space necessary for the description of them. The best plan is to buy a book that describes them. We will give an outline. The Malay cock should describe three downward curves; one from the head to the top of the shoulders; the next from the shoulders to the tail; and the last from the insertion of the tail to its extremity. The comb should be flattened on the head, but be fixed perfectly tight. The feathers should be as hard as metal and very scanty; the point of the breastbone and the exposed joint of the wings should be red and naked; the throat skinny and divested of feathers. The same rules are required in the hen, save the third curve, which may be dispensed with.

Cross Between Dorkings and Brahma Pootras (*R. H. F.*).—The best cross is from a Brahma cock and Dorking hens. It depends on the time of year. In November, a fortnight; in January, six weeks. If the fowls are not laying it is immaterial.

Fowls for Small Space (*A. R.*).—In such a place as you describe, we should advise you to take to Dark Brahmas. They are more than average layers, and are amongst the hardiest fowls we know. A small space will serve for the adults, but you cannot rear chickens in a small place.

Hardy Fowls (*Sarah Ann*).—If you want hardy fowls for general purposes we advise you to keep the Brahma Pootra. If you look for your profit from eggs you must take care to keep pullets of the proper age every year. Your feeding is good, but we do not like rice for food. Greaves are good at times, but as general food they are too stimulating. If your fowls have a grass run, ground oats slaked with water morning and evening, with whole corn for a midday meal, alternately barley and maize, are good-enough feeding. If you are getting eggs now you have no cause to complain; you are more fortunate than many. Feed your old Ducks on oats put in water with a sod of growing grass. Your young ones will want oatmeal or ground oats, and a little raw meat at times will help them if they are hatched early. It would be too long to go into the question of fattening fowls. You had better procure Baily's book, it treats at full length of the process.

Spanish for Exhibition (*Young Exhibitor*).—On no account show the cock with a falling comb; it is a disqualification. The bird with the upright comb and the smaller face is in all probability preferable in every way. If the breastbone be as slightly crooked as you say, we think it unimportant, and redeemed by such large size at an early age. The dead white face would be the most desirable if it be of an average size and not too small. Blue in the face of a pullet may be excused, but there is no hope for eye a blush of red.

Spanish Cock's Excess of Face (*A. C. J.*).—Your Spanish cock has an *embarras de charmes*, and is suffering from excess of beauty. The only thing you can do is to cut some narrow strips of good adhesive plaster, and stick the eyelids back, so that they shall not conceal the eye.

Cochin's Comb, &c., Black (*Large*).—It may be they are frosted, or the bird may have picked up something poisonous; either would cause the appearance. The treatment will be to rub the comb with strong camphor ointment, to give a strong dose (a good table-spoonful) of castor oil, and to follow with bread steeped in strong ale twice per day for three days.

Floor of Roosting-house (*R. H. F.*).—It may be of crushed chalk over coal ashes, as you mention, or fine gravel, with 2 inches of sand over. The floor requires no washing, but to have the fowls' excrements raked off every morning. The surfacing of sand should be entirely renewed once a-year.

Blue on White Rumps in Blue Dragoons (*Pinch Eye*).—This was the subject of a very lively discussion in our pages just five years ago, chiefly between Mr. Jones Percival and Mr. Ludlow, the former advocating the blue rump, the latter the white; each disputant as usual maintaining his own opinion to the last. Singular to say, the Indian Blue Rock has the dark rump, the European the white. As to Dragoons, supposing two pens were of equal excellence, but the one had blue rumps the other white, we think that the former being the rarer colour (and rarity in fancy birds goes a great way always towards constituting excellence), ought to win the prize.

METEOROLOGICAL OBSERVATIONS,

Camden, Square, London.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude 111 feet.

Date. 1871. Jan.	9 A.M. Barometer at 32° and Sea Level.	9 A.M. Hygrometer. Dry.	9 A.M. Hygrometer. Wet.	9 A.M. Direction of Wind.	9 A.M. Temp. of Soil at 1 ft.	In the Day. Shade Temperature. Max.	In the Day. Shade Temperature. Min.	In the Day. Radiation Temperature. In Sun.	In the Day. Radiation Temperature. On Grass.	Rain.
	Inches	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
We. 18	29.166	37.2	36.5	S.W.	35.3	43 1	34 6	54.7	29.4	0.168
Th. 19	29.377	36.4	36.0	N.W.	35.5	38.8	34.7	45.3	31.9	0.026
Fri. 20	29.568	35 2	35.1	N.E.	35.1	37.9	30.5	40.0	28.0	0.028
Sat. 21	29.758	36.5	35 7	E.	35.3	38.5	34.4	38.5	33.2	0.030
Sun. 22	29.581	35.3	35.3	E.	35.0	42.8	30.1	56.4	27.5	0.420
Mo. 23	29.754	36.5	36.2	E.	35.7	38.6	33.8	39.0	30.8	0.090
Tu. 24	30.081	35.7	35.2	N.	36.0	37.0	34.0	38.2	32.4	0.022
Means	29.605	36.1	35.7	..	35.4	39.5	33.2	44.6	30.5	0.779

REMARKS.

18th.—Slight fog in morning; rain at intervals throughout the day.

19th.—Overcast, with rain nearly all day; fog in evening.

20th.—Misty morning, with occasional dripping showers.

21st.—Dull and overcast, but no rain during the daytime; a little wind after 9 P.M.

22nd.—Foggy morning; mingled snow and rain at 10 30 A.M.; at 5 P.M rain began, and from 8 to 10.30 P.M. it fell heavily.

23rd.—Overcast, with showers at intervals.

24th.—Dull. Flakes of snow about 2 P.M., and a moderate fall in the evening, whitening roofs and nonconducting materials (such as planks, &c.), resting on ground. Fresh wind from N. after 10 P.M.

The week is principally noticeable for an almost unbroken canopy of clouds, continuous cold rain, extreme dampness, and singularly uniform temperature, the range at 9 A.M. being less than 2°, and the entire weekly range only 13°—viz., from 30.1° to 43 1°.—G. J. Symons.

COVENT GARDEN MARKET.—January 25.

We are now experiencing the effects of this disastrous war in being shut out of our Paris markets for Lettuces and similar things, which are not to be obtained of good quality from our own growers. Trade generally has experienced a slight improvement, and good descriptions of Grapes and Pears are in greater demand. The Potato trade report large arrivals both by rail and coastwise. Prices, however, remain much the same, although the stocks are heavy.

FRUIT.

	s.	d.	s.	d		s.	d.	s.	d
Apples....½ sieve	1	0	to 2	0	Mulberries....lb.	0	0	to 0	0
Apricots....doz.	0	0	0	0	Nectarines....doz.	0	0	0	0
Cherries....lb.	0	0	0	0	Oranges....℔ 100	8	0	10	0
Chestnuts....bushel	10	0	18	0	Peaches....doz.	0	0	0	0
Currants....½ sieve	0	0	0	0	Pears, kitchen....doz.	1	0	2	0
Black....do.	0	0	0	0	dessert....doz.	1	0	3	0
Figs....doz.	0	0	0	0	Pine Apples....lb.	4	0	6	0
Filberts....lb.	0	0	2	0	Plums....½ sieve	0	0	0	0
Cobs....lb.	2	0	2	0	Quinces....doz.	0	0	0	0
Gooseberries....quart	0	0	0	0	Raspberries....lb.	0	0	0	0
Grapes, Hothouse....lb.	4	0	8	0	Strawberries....lb.	0	0	0	0
Lemons....℔ 100	6	0	10	0	Walnuts....bushel	10	0	16	0
Melons....each	1	0	4	0	do....℔ 100	1	0	2	0

VEGETABLES.

	s.	d.	s.	d		s.	d.	s.	d
Artichokes....doz.	0	0	to 0	0	Lecks....bunch	0	4	to 0	0
Asparagus....℔ 100	7	0	10	0	Lettuce....doz.	1	0	2	0
Beans, Kidney....℔ 100	2	0	8	0	Mushrooms....pottle	1	0	2	6
Broad....bushel	0	0	0	0	Mustard & Cress...punnet	0	2	0	0
Beet, Red....doz.	2	0	8	0	Onions....bushel	4	0	7	0
Broccoli....bundle	0	9	1	6	pickling....quart	0	4	0	0
Brussels Sprouts..½ sieve	3	0	4	0	Parsley....sieve	0	0	6	0
Cabbage....doz.	1	0	2	0	Parsnips....doz.	0	9	1	0
Capsicums....℔ 100	0	0	0	0	Peas....quart	0	0	0	0
Carrots....bunch	0	4	0	8	Potatoes....bushel	2	0	4	0
Cauliflower....doz.	2	0	6	0	Kidney....do.	3	0	4	0
Celery....bundle	1	6	2	0	Radishes..doz. bunches	0	6	1	0
Coleworts..doz. bunches	3	0	6	0	Rhubarb....bundle	0	9	1	6
Cucumbers....each	1	6	3	0	Savoys....doz.	1	6	3	0
pickling....doz.	0	0	0	0	Sea-kale....basket	2	0	2	0
Endive....doz.	2	0	0	0	Shallots....lb.	0	6	0	6
Fennel....bunch	0	3	0	0	Spinach....bushel	3	0	5	0
Garlic....lb.	0	3	0	0	Tomatoes....doz.	3	0	0	0
Herbs....bunch	0	3	0	0	Turnips....bunch	0	3	0	0
Horseradish....bundle	3	0	5	0	Vegetable Marrows..doz.	0	0	0	0

POULTRY MARKET.—January 25.

It is a long lane that has no turning, and the market is getting clearer, When the House meets we look for better things, as good as may be pending the abominable war. We have no doubt small supplies of good fresh poultry will make remunerative prices.

WEEKLY CALENDAR.

Day of Month	Day of Week.	FEBRUARY 2—8, 1871.	Average Temperature near London.			Rain in 43 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.	Days.	m. s.	
2	Th	Meeting of Royal and Linnean Societies.	44.6	31.5	38.0	21	40 af 7	49 af 4	41 af 1	35 af 5	12	13 57	33
3	F		45.0	30.7	37.9	20	38 7	50 4	34 2	27 6	13	14 4	34
4	S	Length of day 9h. 16m.	45 0	32.8	38.9	20	36 7	52 4	37 3	11 7	14	14 10	35
5	Sun	Septuagesima Sunday.	45.7	33.5	39.6	20	34 7	54 4	48 4	48 7	○	14 15	36
6	M	Meeting of Entomological Society, 7 P.M.	46.5	32.6	39.6	21	32 7	56 4	2 6	19 8	16	14 19	37
7	Tu	Meeting of Zoological Society, 9 P M.	46.9	33.0	39.9	24	30 7	57 4	20 7	45 8	17	14 23	38
8	W	Meeting of Society of Arts and Royal Microscopical Society. 8 P M.	45.6	32.0	38.8	22	29 7	59 4	37 8	7 9	18	14 25	39

From observations taken near London during forty-three years, the average day temperature of the week is 45.6°, and its night temperature 32.3°. The greatest heat was 57°, on the 3rd, 1850; and the lowest cold 10°, on the 5th, 1838. The greatest fall of rain was 0.67 inch.

EXOTIC FERNS.

DURING winter, when the snow lies thickly on the ground, and trim lawns are covered with a sheet of dazzling white, it is very refreshing to rest the eye for awhile on a mass of verdure, and it is during such a period that a healthy collection of exotic Ferns is most appreciated; the different species of Palms are noble and worthy companions to them, both are highly valuable for decorative purposes in winter, and well do they repay us for the requisite attention to keep them in a healthy flourishing condition. The Palm claims our esteem for its elegant, and in many cases majestic, appearance; the Fern for its grace and infinite variety, both in the form of the fronds and different shades of green, ever changing, ever pleasing to contemplate. In a previous article in your columns I gave in detail my method of cultivation, and some description of the most desirable kinds; since that time many fine sorts have been introduced to our notice, more experience has been gained, and the present dull dreary period of the year reminds us of their value to add grace, beauty, and dignity to our stoves, apartments, and conservatories.

The crossing of Ferns by natural and artificial means has been doubted by some, but the mass of evidence gradually accumulating must make hybridisation an established fact. There is a wide field of interesting and instructive study in the fructification of Ferns; at what time hybridisation is effected, whether in an early or late period of development, I know not; of this, however, I have no doubt, that if kinds of Ferns bearing affinity to each other are placed in a warm stove in juxtaposition, and if they remain so during the early and late stages of fructification, and until the spores are scattered in the air, there will be found young Ferns springing up in abundance bearing a form intermediate between their parents. Thus Gymnogramma ochracea and G. tartarea will produce intermediate forms dusted with sulphur-like powder; the progeny are not equal to either of their parents in ornamental effect, but I have grown dozens of them to a large size. Lomaria gibba and Blechnum brasiliense have produced numerous intermediate forms, and plants raised from this cross have been named. Lomaria intermedia, again, has taken with L. ciliata. The interesting forms of Scolopendrium and others of our native Ferns, exhibited by E. J. Lowe, Esq., of Highfield House, Nottingham, at the first meeting this year of the Royal Horticultural Society, may be sports, and selections, doubtless, they are, excepting the beautiful Adiantum Capillus-Veneris *var.* admirabile, which I could easily believe to be a cross.

There is yet another instance of peculiarity in Ferns—that most beautiful of all Adiantums A. farleyense can only be propagated by division, its fertile fronds producing a distinct variety, A. scutum. There are two very fine recently-introduced forms of Lomaria gibba—viz., L. crispa and L. Bellii. The latter seldom produces fertile fronds, which is much in favour of its usefulness as a decorative plant, as in the normal form the pinnæ are much narrower on fertile fronds, and they also decay much sooner; in L. crispa the fertile fronds differ but little from barren ones in appearance, and there are both barren and fertile pinnæ on the same frond. I sowed spores of L. crispa in November last year; and in a close, moist atmosphere, with a minimum temperature of 60°, the young plants are now developing themselves.

Of late years there have been some very fine species of Adiantum introduced, and assuredly the best of all is A. farleyense. When this species was first introduced it was in many cases coddled under bell-glasses, where its proportions could not be seen, or its waving gracefully-drooping fronds and elegant pinnæ, deeply fringed at the edges, could not be appreciated—it is grown here in an ordinary stove, and, under proper management, is as free in growth as any of the genus. The plant shows to the best advantage if the pot in which it is grown is placed on an inverted pot of the same size. The fronds are very delicate, easily injured or even destroyed by tobacco-smoke which would not injure any of the others; or, if exposed to a draught, such as from opening and shutting the door, or placing the plant too close to the side ventilators, it will not give satisfaction. It succeeds well in a compost of equal parts of turfy loam and turfy peat torn to pieces by the hand, with a liberal proportion of silver sand. Careful watering is also an important element of success. The other day I measured a noble plant of A. farleyense, in Messrs. Veitch's nursery at Chelsea, having a spread of fronds 4 feet across and 4 feet high. The variety, A. scutum, has been grown here for several years; it is a very desirable Fern; the fronds are not so very susceptible to atmospheric influences as those of A. farleyense, but it does not grow so freely, nor does it make such handsome specimens. A. peruvianum is a stove Fern of free growth, somewhat resembling A. trapeziforme, but having its fronds, which are thrown up freely, more pendant; it is very elegant in growth, and a desirable acquisition. During last season I noted a very desirable variety of Adiantum Capillus-Veneris named maximum; the pinnæ are much larger than in the normal form.

There was also a very fine Davallia, perhaps the best, introduced to the public last year, and one of the most beautiful of stove Ferns; it is well named Mooreana. It has pale green gracefully-arching fronds over 2 feet in length. As it is easily cultivated and free-growing, it ought to be in the most select collection of Ferns. There is also Gymnogramma Pearcei, a very pleasing species with finely-cut fronds. There is in the hands of Messrs. Veitch a very beautiful miniature tree Fern, Leptopteris Wilkesiana; the imported plant has a stem a foot high, the fronds are very thin in texture, and the plant requires a moist warm atmosphere. The best way to grow Leptopteris, and the nearly allied genus Todea, is to have a small glass structure erected in a shady part of the greenhouse, and if some arrangement can be made to plunge the pots in sand or shell gravel, the plants will require but little water, as the glass case must be kept close. Leptopteris Fraserii and superba, Todea pellucida and

T. arborea, do well in such a place. I tried to grow T. pellucida under a bell-glass in a stove temperature, but it did not make any progress until it was removed to the greenhouse, when it began to flourish at once.

It may be remarked here, that in raising Ferns from spores, if it can be managed it is best to remove the pans to a house where there are no specimens, as, if it is a scarce Fern difficult to raise, numerous spores from common kinds will find their way into the pan. To prevent this in a measure, a square of glass neatly fitting over the top is desirable.—J. Douglas.

POTATOES—DISEASE—MERITS.

A great deal has appeared in the Journal lately on the subject of this favourite esculent, and if I take off my coat to enter the arena it is not that, like Paddy, I would trail it along the ground and ask, "Is there any jintleman that would like to tread on it?" for I do not feel at all inclined to dispute. I have nothing to do with the subject of cultivation; so much has been said by so many of your correspondents—and well said—that it leaves little for anyone else to say; and I know that in the case of some, such as Mr. Sage, their theory is borne out by their practice, for a more perfect example of Potato-growing I never saw than with him when he was at Sir Edward Dering's at Surrenden, where, indeed, under difficult circumstances he displayed in all departments of his garden the skill of an adept. There is one point in connection with Potatoes which I would like to say a word about, and that is the subject of the disease.

I am more than ever persuaded that this is a mystery totally unsolved, as great a mystery as it was in the days when it first made its appearance. Let me take the past season as an example. I rather astonished some good horticulturists from various parts the other day, when I stated that I had never had the Potato disease so badly in my garden as last year. "Disease! What, last year! Why, we have not seen a diseased root!" Yet so it was. A few miles off the Potatoes were perfectly free from disease, although small, but all around me they were bad. Some of the cottagers here had not one good Potato in five; they grew out—supertuberated as it is now called—grew away like wildfire, but the produce was very disappointing. "Perhaps you too highly manured," says one. Well, one place where I grew mine was a portion of a meadow which had not been turned up for twenty years and had not a spoonful of manure put upon it, so that will not hold. "Ah! but," whispers my friend Mr. Radclyffe, "you did not dig up early enough." Well, I dug up some Lapstones early in August and others early in September, and there was no difference. "But perhaps you grew only delicate kinds." Wrong again. I grew thirty-six different varieties, a thing I am not likely to do again, and one thing only I have found—that the coarser the Potato the less liable it seems to be to be attacked. But this again varies in other places, for I remember seeing this year some of the very coarsest red Potatoes grown (called March Reds here), as badly diseased as any, so that I believe the Potato disease to be one of those things "no fellow can understand." That it is dependant somehow on atmospheric influence cannot be denied, and that the first week of August seems to be about the time of its commencement is also undeniable. I have never but once seen early Potatoes suffer from it, and if by early planting the crop could be ripened off by the beginning of August I expect the tubers would be pretty safe. This is Mr. Radclyffe's plan, and I believe it answers with him.

With regard to what constitutes a good Potato I have very decided and perhaps hypercritical notions, but unless we have a good standard we shall be inundated, as we already are, with rubbish. These qualities come, I think, in the order named—1, Flavour; 2, Texture; 3, Colour; 4, Form. With regard to flavour, there are some people who discern no difference. A Potato is a Potato, and that is all; it may be earthy or not, mealy or waxy, it is nothing to them. Now to this I cannot subscribe. So necessary an article of food ought to be as good as we can get it. It is as useful as bread, and we ought to be as careful to have good Potatoes as good bread. If a Potato is earthy and strong I think all its other good qualities avail it nothing. And here let me protest against a statement made some time since in a contemporary, that it was a mistake to boil Potatoes in their skins, that they always had an earthy taste. Now, I would never boil a Potato, they ought either to be steamed or baked. To boil Potatoes peeled is to boil all flavour out of them; and well do I remember Power, the inimitable Irish actor, describing his visit to England, saying, "Them's a barbarian people, they peels their taters afore they biles them." A Potato should not be sweet, but should have a peculiarly delicate flavour unlike any other vegetable one can name. As to texture, mealiness is an essential to a good Potato, but this, withal, not of too decided a character; there ought to be firmness as well—no medium. Mr. Fenn's Onwards is too floury, and I believe when that is the case flavour suffers; but this is a much rarer defect than the opposite, closeness. Some people prefer a waxy Potato, and there is no accounting for taste, but I think no true judge of the esculent will agree with this perverted judgment. Colour, of course, is not so material a point as the others, but a Potato ought neither to be yellow nor red; when it is yellow there is generally a tendency to waxiness, and when red to coarseness. A Potato ought always to be white inside. As regards form, my own preference goes decidedly in every respect for the kidney or pebble-shaped Potato, although some prefer round ones. But whichever they are they ought to be shapely, the eyes not sunk deeply, and of medium size. I quite agree with my friend Mr. Radclyffe that middle-sized tubers are the best; even the very best kinds when overgrown are not so good as when smaller.

Having thus laid down what in my opinion are the points to be considered in a Potato, I proceed to examine those which have come under my notice. The soils in which I have grown them are a pasture whence the top spit was taken in the spring, and my garden, which is of a good blackish loam, such as is generally called good garden soil. In giving my opinion of the sorts grown by me I mean simply to speak of them as I found them. I know soil and situation have a vast influence on the Potato, and my judgments may not square with those of growers in other localities.

First with regard to the American varieties. Of these I grew Early Rose, Early Goodrich, King of the Earlies or 50-Dollar Potato (what fools there are in the world!) Prolific, and Climax. These are all from one raiser, and all of the same stamp.

Early Rose I grew on a warm bank, in light garden soil, and I found it a well-flavoured Potato. Some grown in another place were very indifferent, and I very much question whether in any ordinary season it will be good. With regard to all the others, I think them essentially bad. They are no doubt good croppers, and where pigs are kept this may be an advantage; but as to flavour they have none, except a nasty one. Their colour is bad, their texture close, and their form large and coarse. I may add that through the kindness of one of our great London seedsmen, to whom I mentioned my opinion of them, and who somewhat questioned its truthfulness, I was enabled to cook a dish of each of these varieties as imported from America, so that I was able to give them a fair trial; and of the things to eat, drink, and avoid, I should place in the latter category these American Potatoes. I do not see one redeeming feature in them, and did I not know what varying opinions and tastes there are in the world I should most heartily wonder at their being ever sold. "*Omne ignotum pro magnifico*" may be true of them before trial. They come from a long way off, and the Americans may have different notions on these subjects—in fact they must have. Mr. W. Robinson exhibited on January 18th some of the favourite Potatoes of the Mormons, and they were hardly distinguishable from Bovinia, so fit only for pigs; but that anyone having once grown them should wish to again try his hand at them surpasses my belief. If this be American taste we are in the matter of Potatoes far ahead of them.

My opinion of the English varieties I must postpone.—D., *Deal.*

POINSETTIA PULCHERRIMA CULTURE.

So much has been said about the cultivation of this plant that to some it will appear superfluous to say any more; however, the fact of its being one of the very best plants for conservatory and house decoration in winter, and the hope that my experience in its cultivation may induce others to grow it more largely, must be my excuse for these few remarks.

I have in our conservatory just now about one hundred plants from 6 to 12 inches high, many with bracts 10 inches across. Your readers can imagine much better than I can describe the effect such a display will have amongst a collection of miscellaneous decorative plants.

My practice is, when the plants have done blooming to put them all together in the corner of a light pit, the temperature of which is intermediate, giving them only just enough water to keep their roots alive—much the same as one would treat a

pot Vine at rest in winter. My oldest plants are but two years old; all these I throw away, keeping only those struck last year for growing on another season, and to propagate from, because I consider the summer-struck plants by far the most effective.

When the plants begin to move, which will not be before the beginning of April if kept as mentioned before, they should be cut back to three eyes; and those who have not a sufficient stock can easily increase it by inserting the eyes in shallow pans or small pots, and growing them in a genial heat throughout the summer; but they do not make such good plants as cuttings. After being cut down, the plants should be syringed once or twice a-day according to the weather, kept close, and in the course of a week or ten days should have a thorough watering with tepid water. When they have fairly started into growth turn them out of their pots, shake the old soil entirely out, and with a sharp knife cut their roots well back. Repot, not too firmly, in clean pots, and as small as you conveniently can, using a compost of two parts turfy loam, one of peat, and one of rotten cow dung, with a liberal admixture of silver sand. After potting return the plants to the same pit; or a more shady situation would suit them better for about a fortnight, or until they have again started into growth, because if they are allowed to flag for any length of time at this stage, through negligence or any other cause, it will be very injurious to them. When they have overcome the effect of their potting, put them back in a light pit, and keep them close to the glass. Give air freely in the morning, plenty of water, and as much room as you can afford them. Close the pit early in the afternoon, having previously syringed walls, pipes, and all other available spaces. When the plants have filled their pots with roots shift into a larger size, and treat as before recommended.

At the beginning of August (not later), after the plants have again filled their pots with roots, have in readiness, if possible, a dung frame with a genial sweet heat. Take off the cuttings with four or five large leaves attached, insert each cutting singly in a 3-inch pot without removing a leaf from the shoot, and keep them close for about ten days or a fortnight (take care there is no rank heat in the frame), and they will be struck. When they have filled their small pots with roots, which will be very soon, pot and treat as recommended for the others, until the bracts appear, when they will do better in an ordinary stove, watering them two or three times a-week with weak guano water.

Anyone who will faithfully follow the practice I have endeavoured to describe, cannot, I am sure, fail of success.—C. Thomas, *Drayton Manor Gardens.*

CALCEOLARIAS, THEIR CULTURE AND FAILURES.

Mr. Record having at page 44 directed attention to the behaviour of the Calceolaria during the past summer, I am inclined to endorse much that he has said on the matter, and to give my reasons for differing from him as regards some of the details. First of all I have not had so much experience as many with what is very properly called "disease" in these plants; although in certain seasons they have done badly, but seldom have any died off in that sudden manner of which others complain, after the plant has attained a good size and shown every indication of good health. On more than one occasion, however, there has been so destructive an attack of aphis just before the plants were turned out, that they never recovered it. At another time circumstances have prevented our attending to them in time, and they have stood too long in the cutting bed and become drawn up and been otherwise injured; both these evils I admit are capable of amendment, but at a very busy time it is not always possible to prevent something being neglected, and on more than one occasion the two evils alluded to have marred our Calceolaria bloom considerably. The difficulty of ensuring them the attention they require has induced me on more than one occasion to treat them with what I may justly call undue harshness, rather than allow them to spoil each other by the stifling indulgence of remaining in the cutting bed; in other words, I have tried planting them out long before the period generally thought proper, and with a result that will be described. As the mode in which they are wintered, and other circumstances, have considerable influence on their condition at planting-out time, I will commence with their propagation.

Adjoining one of the walks in the kitchen garden, running east and west, are two brick pits, each 120 feet long, and rather less than 6 feet wide inside, the brickwork 4½ inches thick, and with a timber wall plate back and front, and the height above ground is a little less than 18 inches in front, and something more than that at back; but the inequality of the ground makes the actual difference between the back and front about 18 inches. There are no rafters proper, but the back and front walls are tied together by cross pieces of timber set flush with them, and 10 or 12 feet apart, and there are a few brick partitions dividing the pit into compartments. The whole is as simple and inexpensive a pit as could well be imagined. The absence of rafters allows of our digging, and of putting in cuttings, more conveniently than if they were there, while any width of light or shutters will fit if long enough to take a bearing on each side. In one of these pits adjoining the vegetable quarter of the kitchen garden I have for many years been in the habit of wintering Calceolarias, and none of our bedding kinds, excepting, perhaps, a new or choice one, has had a place in a pot, pan, or box for at least eighteen years, and their treatment has been the reverse of coddling, yet I am constrained to say that in general they do not flower so well out of doors as they did at the commencement of that period; but as this, in my case at least, is owing to causes in no way connected with their treatment in winter, I may as well, when stating the character of the cold pit, describe the mode in which they are treated there.

As allusion has been frequently made to the time of putting in the cuttings, I may remark that I do not think the mere fact of their being put in, say at the beginning of October or end of November, is always the cause of their doing well or badly, for I have put them in as late as Christmas and as early as the end of September. In general, however, the condition of the weather and the character of the cuttings point out the time for propagating; as a rule, before doing so, it is better to let the dry weather, which sometimes continues for a week or more into October, be fairly over and moist weather fairly set in. Do not wait until severe frosts have injured the plants, not but that they will bear a little frost; still it is better not to be too late. In general the most of our cuttings are put in during October; but as we rarely put the lights on for a long time afterwards, there is no inducement to hasten their rooting, and sometimes their appearance, if a dry, withering wind occur, is not inviting; on the approach of frost, however, they are covered up with such odd lights as there are to spare, and, if these be not sufficient, with wooden shutters made of half-inch boards. At the commencement of the late severe weather, happening to have as many old lights as covered all the Calceolarias, and some shutters to spare, the latter were laid over a portion of the glass on December 20th, and remained there till January 21st, the Calceolarias being thirty-two days in darkness, and by their appearance I do not expect to lose any, except some plants of C. amplexicaulis; even where there was glass only, the Calceolarias seem to have survived. A covering of snow during the most severe period was of much service, and a little snow was also thrown against the brick walls forming the sides, and as they were not uncovered until nearly ten days after a thaw had set in, the evils of a sudden change of temperature were avoided.

Calceolarias will endure moisture and confinement to a degree which few other plants of similar growth will resist; nevertheless, for some years I have been in the habit of putting in the same pit Gazanias, Cupheas, Cineraria maritima, and other plants, and with a fair share of success; rows of these between different kinds of Calceolarias look very well at the present time, January 23rd. I have never been able to do much with Verbenas, and Centaurea candidissima has not always succeeded well, although C. gymnocarpa usually does. As the character of the Calceolaria cuttings has been alluded to by Mr. Record, I may say that if I had the choice I would prefer short-jointed, rather stubby cuttings slipped, not cut off, with the ragged heel, which I would leave on, taking off only one, or at most two leaves; but as the character of the season determines the kind of cutting, it is not always that a choice can be made. Usually when Calceolarias have been arrested in their growth, say in the middle of July, by the dry weather, they flower out whatever shoots they have, and grow no more, or very little, until the moist weather of September or later again starts them into growth, when a rapid long-jointed growth often takes place, so that as a matter of necessity the cuttings must be shortened, as was the case with the bulk of those here the past season. Of course a less robust growth is met with when plants have been occupying some indifferent position; but the propensity of the plant to furnish roots in winter is so great,

that whatever the kind of cuttings, most of them root pretty freely; succulent long-jointed shoots, with hollow stems, seem to stiffen after being inserted in the ground, and eventually furnish stocky plants.

Our mode of putting in the cuttings is to level and dig the ground in the pit, and add as much roadside or drift sand as seems necessary to make the soil open; but before that, if it should happen that the same place has had a heavy crop of Calceolarias upon it the preceding season, the soil is thrown out upon the kitchen-garden side, and as much taken from thence as will replace it, the exchange being equally beneficial to kitchen-garden crops. Of course all stones of large size are kept out, and the ground for the Calceolarias is not dug more than 6 inches deep. Sufficient sand having been added, and a board for the workman to stand on, he inserts the cuttings in rows, as nearly 3 inches apart as possible, and certainly not more than 2 inches from each other in the row; this gives twenty-four to every square foot, and I think there are sometimes more than that. The cuttings remain till, probably, the beginning of March, when they will be well rooted, and alternate rows are lifted out by a sharp spade being thrust in on each side of them. These rows are bedded out in some sheltered place in suitable soil, and the places they occupied are filled up with fresh soil, so that the plants which remain have more room to grow. I very seldom stop them, except in the case of some that are not likely to have a chance of being planted out soon, in which case stopping may be practised; but where there is a choice it is better to plant out first those which have not been disturbed at all, as they will be the most forward, and when this can be done, and the rudest of all shelter is afforded them for a little time, it will generally be found better than waiting later. Last year we planted out upwards of three thousand Calceolarias before April 15th, and they did better than those that were later, although they had no assistance nor protection; fortunately there were no frosts till they had been more than a week out, and the weather was favourable at the time of planting. I have also in former years planted out sooner than this, but it was merely as an experiment, and in general the end of April is early enough; at the same time, planting out so that the plants may have the benefit of a gentle shower is of more importance to the Calceolaria than to most bedders, and where they are choking each other in the cutting bed delay only increases the evil, and renders them more and more unable to make that effort to grow so much needed by a plant that has to be removed. Of course all coverings are dispensed with late in the season, and, in fact, as soon as the plants show a determination to rush upwards full exposure must be given, and only on frosty nights are the coverings put on; at other times they lie heaped one above another over some vacant place in the pit, or if compelled to be above plants, their position is changed as often as is required.

Of the causes which tend to this plant failing, as it often does, much has been written, and certainly there is yet much to learn. It would be a boon to flower gardening if anyone could make the cultivation of the Calceolaria as easy a matter as it was twenty years ago; at the same time the treatment ought to be very simple, easy of application, and suited to other plants which are often made to occupy the same bed as the Calceolaria; for a soil specially adapted to this plant, and that will not also do for many others, is next to useless in a great many cases, as some of our most important flower beds contain three or four species of plants, and it is very inconvenient, often impossible, to treat one of them differently from the rest.

I have little hope of much success in the way above indicated; I have certainly more faith in a judicious selection of varieties suited to the soil and situation, and I believe some good would result from going back to the first imported species if it is to be had, for I am not sure that the long narrow-leaved kind often called angustifolia now, is really the original one of that name, neither may the short rugose-leaved kind be true. One of the first of the named varieties was certainly the best I had the past summer, and next to it was one popular about twenty-five years ago—viz., C. viscossima, while C. Aurea floribunda failed very much; although I must own that in some seasons this variety has done well, still I think it is about worn out. My practice of late has been to plant two kinds together, and if in a row, alternate plants of a broad and narrow-leaved variety, so that in the event of one failing the other may succeed. In general the dwarfest varieties succeed worst; they seem to make least progress in growth, and now and then some die off after lingering for a time in a half-dead condition; for, as I have said before, it is seldom any go off suddenly with us (except in the case of the so-called disease), if they once show signs of good health.

With regard to the character of soil best adapted for the Calceolaria, I am far from being certain that the views I now venture to put forth are correct, but I should say that the plant would seem to enjoy a soil in which lime is plentiful, but to add it to some fertile soils might be very imprudent, on account of its destroying the organic matter, so that I hardly expect to see Calceolarias do well in the places where Golden Geraniums are grown to great perfection. Many years ago I noticed this in some gardens in Staffordshire and elsewhere, about the time that Golden Chain Geranium was first introduced in quantity; the Calceolarias were anything but creditable, and, I believe, have become worse since. I should say the absence of lime had something to do with the one plant doing so well, and the other so badly. Of course, season has an influence, but the Calceolaria is rather a gross feeder, liking heat, depth of soil, and moisture, and when the latter is absent success is precarious. In my own case the plants generally flower well early in the season—in fact, flower themselves out, no growth taking place owing to the dryness of the early summer, and when rain in sufficient quantity does come, a quick growth is the result, but it is then too late to flower, consequently after the second week in August, or so, Calceolaria bloom is far from plentiful. Watering by hand, whether beneficial or not (for I have my doubts about it), is out of the question with us, and even if it were of service, water could not be applied to Calceolarias growing by the side of Geraniums without the latter having it also, and probably becoming overluxuriant.

I should be glad to fall in with some plan by which the constant flowering of this plant could be insured without that special management, which, if not equivalent to its prohibition, is certainly very inconvenient. At the same time we cannot well do without it. No other substitute yet proposed is likely to be so great a favourite; and if varieties of better constitution are not to be had, would it not be worth while to re-introduce the plant from its native mountains? and if its re-appearance gave us a few years of its services, as at first, the expense of importing it afresh might not be thrown away. Some years ago I had cuttings from a place one hundred miles off to try what a change would effect, but that was not like introducing the original plant.

From the above, it will be seen that I attribute the failures we have had here with this plant to the dryness of the season alone, and I imagine that the plant will succeed in places where rain during the early summer months is more plentiful than it usually is with us, provided the soil and other circumstances are favourable. Heat, I also believe, is an essential condition, and it is possibly the deficiency of heat which makes the plant more unwilling to grow near the coast, but control over the seasons is out of the question. The habit of the plant, the brilliancy of colour which its flowers present, and other qualities, make the Calceolaria a plant which we cannot do without, and I hope to see that uncertainty which at present hangs over it removed, and the good service that it did in the flower garden twenty years ago resumed. Some good, no doubt, may be done by those who have been hitherto successful with it reporting the character of the soil and other particulars, but I fear those who have had cause to complain of it form the majority.—J. Robson.

PORTRAIT OF MR. RIVERS.

In addition to subscriptions already announced, the following have been received:—

	£	s.	d.
Coleman, Mr. J. N., Great Mongeham, Deal....	0	5	0
Kemp, Rev. George, Sevenoaks	1	1	0

ROYAL HORTICULTURAL SOCIETY'S SCHEDULE.

There can be no question as to the very varied character of the prizes offered in connection with the Society's exhibitions this year, and it will not be from want of encouragement if any cultivator in any branch of horticulture do not see something of his favourite hobby this year, while the Show at Nottingham, with its £1000 of prizes, ought to be a great success. There are some features in the new schedule which especially call for remark, particularly that of different nurserymen offering prizes for the productions they have been the means of introducing amongst us. Mr. W. Paul offers prizes for

Princess Christian Rose, and Messrs. Carter & Co. for vegetables. I think that such a course deserves the highest praise, and that were it to be imitated by other introducers of novelties we should be better able to test the value of the very many varieties of new vegetables, and, what is more, to see how many different vegetables are out under the same name—not, I believe, dishonestly so, but simply because there is no way of comparing them.

I am sorry to see Hyacinths so poorly encouraged, and cannot but think the prize for eighteen white Hyacinths a great mistake.—D., *Deal*.

GROUND LEVELLING AND PRACTICAL GARDEN PLOTTING.—No. 12.

DRAWING PLANS.

To draw and transfer *fig.* 35 to the ground, form the rectangle A E C D. Draw the diameter lines E F and G H, and the other lines as 1 2, 3 4, &c. Lines 7 8, 17 18, 33 34, 43 44, form the square *i k m n*; on each side of the diameter lines E F and G H point off 2 feet, and draw lines 11 12, 13 14, 37 38, 39 40; draw the diagonal lines *i n*, *m k*; draw squares *a b c d* and *e f g h* on the diagonal lines.

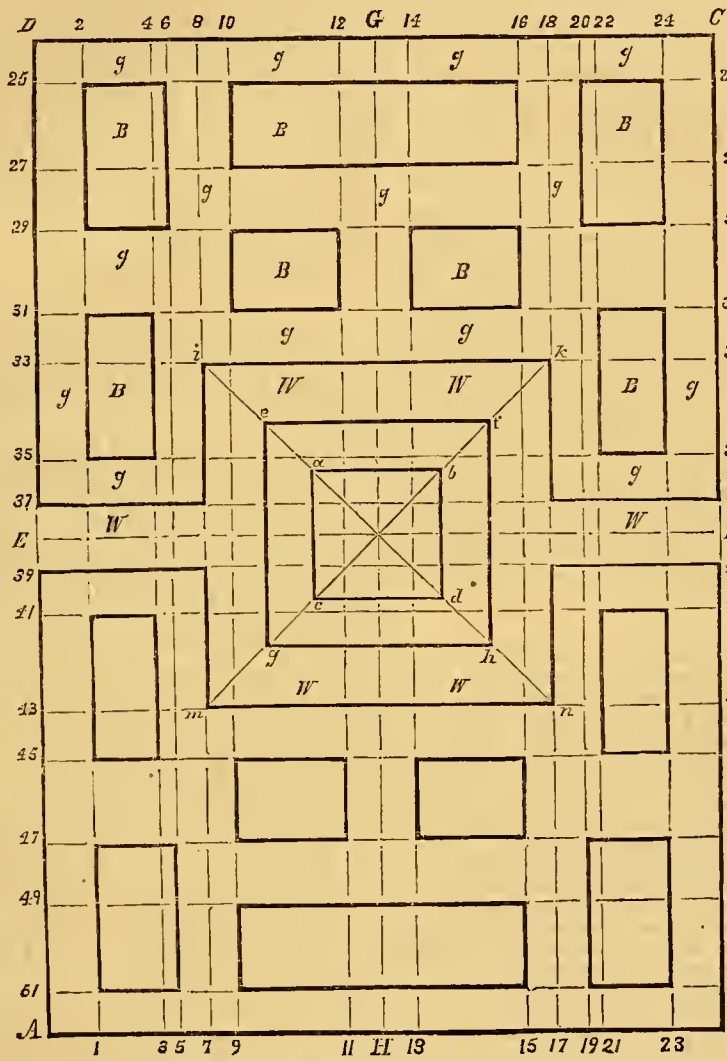


Fig. 35. Scale 12 feet to the inch.

To transfer the plan to the ground, insert a stake at point A, and lay a line from point A to point B, which is 42 feet 6 inches in length; insert a stake at point B; lay the line from point B to point C, the distance between being 63 feet; insert a stake at point C; lay the line to point D, and there insert a stake. Line C D is equal to line A B. Lay the line from D to A, which is equal to line B C. Lay the diameter lines E F and G H. From the stake at point A, on line A B, measure 3 feet (which is the width of the grass verge), and insert a peg as at point 1. From the stake at point D find the corresponding point 2. From the stake at point A measure 7 feet, and insert a peg as at point 3; find the corresponding point 4 on line D C, and there insert a peg. From the peg at point A, on line A B, measure 8 feet 3 inches, and insert a peg as at point 5; also on line D C find the corresponding point 6, and there insert a peg. Again from the stake at point A measure 10 feet, and insert a peg as at point 7; on line D C find the corresponding point 8, and insert a peg. From stake A measure 12 feet, and insert a peg as at point 9; find the corresponding point 10 on line D C, and insert a peg. On each side of the diameter lines E F and G H measure 2 feet, and insert pegs as at points 11 12, 13 14, 37 38, 39 and 40. Points 15, 17, 19, 21 and 23 are found from the stake at point B as points 1, 3, 5, 7, and 9 are found from the stake at point A. From the stake at point C find the corresponding points 16, 18, 20, 22, and 24; insert a peg at each point. From the stake at point A, on line A D, measure 3 feet, and insert a peg as at point 51. On the same line measure 8 feet, and insert a peg as at point 49; also from the same point measure 12 feet, and insert a peg as at point 47; on the same line measure 17 feet 3 inches, and insert a peg as at point 45; from the peg at point A measure 20 feet, and insert a peg as at point 43; from the same stake measure 26 feet 3 inches, and insert a peg as at point 41. Find the corresponding points on line B C, as points 52, 50, 48, 46, 44, and 42. From the stake at point D, on line D A, find points 25, 27, 29, 31, 33, and 35 in the same manner as points 51, &c., from the stake at point A. From the stake at point C, on line C B, find the corresponding points 26, 28, 30, 32, 34, and 36, and insert a peg at each point. Lay lines as from peg 1 to peg 2, and from peg 3 to peg 4, and so on, until lines are laid between all the corresponding pegs. Lines 7 8, 17 18 33 34, 43 and 44 form the square *i k m n*. Lay the diagonal lines *m k* and *i n*. On the diagonal lines form square *a b c d*, which is intended for a bed, the length of the side being 8 feet. Form square *e f g h*, the side being 14 feet. The space between the two squares is intended for a grass verge 3 feet wide; insert a peg at each point, and lay lines from peg to peg, and the figure is complete. B, beds; *g*, grass; w, walk.—M. O'Donnell, *Gardener to E. Leeming, Esq., Spring Grove, Richmond.*

POTATOES—PLANTING EARLY, DETECTING QUALITY, AND OTHER HINTS.

The "noble tuber!" I regret to say that I hear a bad account of the state of Potatoes, by reason of the severe frosts. The poor people here have lost both their "eating" and seed Potatoes. This winter has been the severest since 1860. Notwithstanding thick coverings of straw, I have lost a bushel and a half. As soon as the frost broke up I commenced planting on January 14th, and have just finished all my garden plots. The ground worked well; with the aid of a little straw placed

over the ground, I look for no more disaster from frost. A little surface frost excludes the air, and helps, with the straw, to preserve the "noble tuber." Last year severe frosts succeeded the planting, but no mischief was done to the planted tubers. Some of the plots were not even covered with straw, but were fully exposed to the east, south-west, and north winds, in this very exposed vale.

It is said that if frosted Potatoes are placed in water for a few days, and then dried before the fire, they will "do" for seed. I have five tubers in water, and intend to plant them for experiment. I should hardly think they would succeed. A frosted Potato is decomposed.

I believe the Potato disease, in a great measure, partakes of the nature of dropsy, as it usually takes place after heavy rains succeeding long drought. Perhaps what we call fungus is the mere disruption of the cells. I merely throw out the suggestion, and confess that I am quite in the dark. I have had no diseased Potatoes this year, and only one diseased tuber last year. I am satisfied that "early ripeners and late keepers" are the only sorts to plant.

I am much amused by reading what is said of some Potatoes, which I was obliged to cast out. It is not my province to write them down. The sorts I keep are well known, and need not be named. The following observations may interest, and, perhaps, profit the reader.

If you buy a sack of Potatoes, buy big and moderate-sized ones together, and you will obtain 20 lbs. more weight than by buying all large ones. Moreover, large Potatoes, even if the sort is good, are not so eatable as moderate-sized Potatoes. If you want to test uncooked Potatoes, take, say, five sorts or more of the same size, and whichever weighs heaviest will be the best Potato when cooked. A light Potato never yet was good. When Potatoes are cooked, if you do not wish to taste them, you can tell their quality by breaking them in half, and applying a magnifying glass. That will be the best Potato, the grains of which look whitest, like pounded white sugar. If the grains look dark or muddy, the Potato will not be good. A cat or dog will not eat a Potato unless it is good; their fine noses detect what our unassisted eyes cannot see or noses smell. My latest, Yorkshire Hero and Taylor's Yorkshire Hybrid, are good, and will last well till June. Last year my servants preferred them to the Royal Ashleaf, dug June 4th. Plant your Potatoes before they are much grown out. Breaking off the sprouts weakens the plant.—W. F. Radclyffe.

SETTING AND CROSSING GRAPES.

As Mr. Pearson remarks at page 509 of last volume, we have all seen recommended for the abovenamed practices, by one a hot dry atmosphere, by another a damp atmosphere, and by a third a high dry temperature with plenty of air. From my experience I am decidedly of opinion that either extreme is not to be commended. Like Mr. Pearson I have been crossing Grapes for the last twelve years, and many other things for the last twenty, and have taken much interest in the pursuit. I have always found a dry air not productive of pollen.

With the view of hearing the opinion of others, about two years ago I put the question to the gardening public whether a dry or a damp atmosphere was considered the more favourable for setting. I consider no decided treatment can be laid down as ensuring the desired result, especially in a mixed collection including such known bad setters as those named by Mr. Pearson—Black Morocco and Canon Hall Muscat. These two sorts I have grown successfully under the following treatment.

The Black Morocco I found always had on the top of every pistil a dewdrop. I considered this prevented fertilisation by not allowing the pollen a free entrance at the top of the pistil. I applied the pollen of free setters, but finding this ineffectual, twice a-day, as the bunches came into bloom, I carefully drew them through my hand till I was certain the dewdrops were all cleared off. Mr. Pearson's mode of proceeding had the same effect, for he brushed the bunches with a large camel's-hair brush covered with pollen; in doing this he would clear away the dewdrops, and a portion of pollen would at the same time be applied.

As to the Canon Hall Muscat I had to grow a number of it, our family having a great liking for large-berried Grapes, and I tried several experiments with this variety. I carefully applied pollen of free-setting sorts, but that I found not effectual. Anyone who has grown the Canon Hall must have noticed that there is double the number of flower-pips on every bunch as compared with other Grapes. This I thought was approaching to a monstrosity, therefore I waited till the bunch was about to bloom, and then severely thinned the flower-pips, taking away three out of every four. Under this treatment, and by tapping gently the rods when in bloom, I rarely failed to have satisfactory-set bunches.

As regards crossing, I agree with Mr. Pearson that it is not so easy to effectually cross Grapes as many would imagine. I agree with Mr. Pearson also that colour, according to my experience, is accidental, as I have proved in the three last varieties I operated on. These were all dark varieties. The first I shall notice is my own Champion Hamburgh Muscat, sent out by Messrs. Veitch. This I crossed with Snow's Black Muscat Hamburgh [Black Muscat of Alexandria]; the produce was a Golden Champion Hamburgh with a true Muscat flavour, and it showed colour before the common Hamburgh in the same house. The second was Lady Downe's crossed with Snow's Black Muscat Hamburgh; the produce was a deep golden-coloured Grape of the same habit of bunch as the male parent, the bunch long and well-shouldered, the berries with a distinct Muscat flavour. The third was Snow's Black Muscat Hamburgh crossed with Muscat of Alexandria; the produce was a deep golden-coloured Grape, with the bunch the same in habit as Snow's Black Muscat Hamburgh; the bunch long, well shouldered, setting freely, and perfuming the house, and the flavour a decided perfumed Muscat. The golden colour comes much sooner than in a Muscat of Alexandria.—W. Melville, *St. Lawrence Vineries, Jersey.*

P.S.—There have been erected here nearly 1000 feet of new glass, of which at some future time I may give details.—W. M.

FRUIT TREES FOR SMALL GARDENS.

"C. C. E." asks me, page 432, vol. xix., to say "whether my conclusions have been arrived at by actual experiment with a strict cash account, or whether they are merely an inference, &c.?"

The conclusions are based on actual experiment, but not with a strict cash account, for we in private gardens do not keep (to our disgrace be it said), cash accounts in the way that "C. C. E." means. We grow what our employers regard as luxuries more than as paying crops, and I fear "C. C. E.," and also our Editors, see fruit as do our employers; the finest and best is all they care for, having no eye themselves to the cash account. There is a great difference between growing for private use and for sale. For instance: A has a vinery erected for growing Grapes for his own use, and B has one constructed to grow them for sale. A spends fully twice as much on the house as B, and he plants kinds that he has a peculiar liking for—kinds that will not give half the produce of those B plants. A wants variety, and the gratification of his palate; but B wants cash, and he must plant certain heavy croppers, and of a quality most in demand. B's house pays, with a large margin of profit, but A's does not pay with a strict cash account. It is just the same with bush-fruit trees. A will have the kinds calculated to afford the finest desserts, he thinks nothing of a kind that is a certain cropper, and in quality little inferior to that which he must have at any cost; he "goes in" for the very best of everything, likes a fruit because it has a peculiar flavour, and forgets, perhaps, that it is a notoriously shy bearer, but he likes it all the better for that reason, and wisely keeps from asking a strict cash account of his gardener. His gardener (B we will call him), commences growing for sale. He does not cater for those who may be purchasers of fruits for the sake of their peculiar flavour, but he plants the good and useful kinds, which always find a ready sale, and are large, certain croppers. He finds, for instance, that Lord Suffield, Cox's Pomona, Cox's Orange Pippin, and Domelow's Seedling Apples will at three years old give a peck of fine and equally good fruit for his purpose, while the fancy sorts do not at that age give a tenth of the quantity. I need not tell "C. C. E.," that an acre planted to suit A will not pay, for that is, I believe, his case; "a source of increasing interest and pleasure" it may be, but he must not look for the cent. per cent. return of B at seven years, which I know from actual experience cannot fail to result if the trees bear as well by the hundred as by the dozen, and by the thousand as by the hundred.

I am glad of "C. C. E.'s" communication, for it gives me an opportunity of saying something of kinds I would grow for market. "What! Not all named in your list?" Why, no? These varieties will suit all but the very fastidious, being most excellent in all respects; but for sale I should grow of kitchen

Apples: Lord Suffield, Cox's Pomona, Dumelow's Seedling, Gooseberry Apple. Dessert Apples: Early Harvest (a few), Cox's Orange Pippin, and Pitmaston Nonpareil. *Plums:* Oullins Golden, Early Rivers, Orleans, Prince Englebert, July Green Gage, Belgian Purple, and Victoria. *Pears* · Bon Chrêtien, Beurré Bachelier, Beurré Diel, Beurré Hardy, Bergamotte Esperen, Beurré d'Amanlis, Comte de Lamy, Alexandre Lambré, and Marie Louise. Will "C. C. E.," or any one, state what results they have found from the above sorts, by actual experiment by the acre?

Again, "C. C. E." says I have a large margin in the estimated cost of trees—Apples at 1*s.* 6*d.* each. He quotes prices which were I to buy trees at, I should not plant them at 6 feet apart, but in lines 3 feet from each other, with a distance of 18 inches in the row, and I would keep the trees there until they were fully 4 feet high, well furnished, and fit for planting at 6 feet apart, which I do not consider they are until they have had three years' growth and training beyond the maiden growth. The trees would cost, if they were selected at any nursery, what I have named, for I would, of course, take only the best, such as I should not have to keep unprofitably, but that would go to work at once. I am no believer in cheap first costs, and should go in for trees for an acre as for a select border—varieties excepted. Thus "C. C. E.'s" trees at seven years would only be doing what mine would at four.—G. Abbey.

ANONYMOUS CRITICISM—MESSRS. CARTER'S PRIZES.

In an able article on criticism which has arrested my attention, Mr. Paul lays bare an unjust practice, and makes out a good case for publicity of critics' names. It will have its effect. A few years ago the country was flooded by lucifer matchboxes, on which were engraved some well-remembered figures. Look at them on one side, and we see the very acme of pleasure and satisfaction beaming from the countenances of the faces there depicted; stand on the other side of the box, and we see the same figures expressing the very incarnation of ugliness. Criticism has two sides. Mr. Paul stands on one side—publicity, and sees the pleasant aspect. I stand on the other side, and see the same figure ugly—inexpressibly ugly. If I go to Mr. Paul's side I shall see as he sees. If Mr. Paul will come to my side he will see as I see. I have gone over to Mr. Paul's side, have seen with him, and believe. Let him come over to my side, and believe with me, if he can. If Mr. Paul can see as I see, and feel as I feel, he will, I think, say as I say, that if anonymous criticism is ugly, the other side of the question is ugly too.

Mr. Paul has given an example. I will give one. I have in times past sometimes felt it a duty or a pleasure to contribute an article to this and other papers, and to which I have attached my name and address. On almost every occasion I have had private letters bothering me for something or other. Now, I do not call this ugly, but I do not call it nice, as it raises the question courtesy *versus* postage stamps. Through unavoidable circumstances I am often scarce of the latter, and I do not grumble much; but if conserving the former adds to the existing scarcity of the latter, I have a right to grumble and stop the demand on my resources. This, as before said, I do not call ugly, but I do the following. If I have happened to have written recommendatory of an article, and have given the reason of my success, I have been insulted by applications for a few dozens or a few hundreds, intimating that as the production cost me nothing, I might make a "good thing of it," and my master be no worse. I call that the ugly side of publicity, and I determined to avoid the temptation by taking away the means which called it into action. Seldom since, except by special request, have I appended my name, whether the article has contained praise or blame, or whether in this respect it has been neutral. Herein I may have erred, not that anything I could say would do either much good or much harm, but that it is but just and honest in principle that critics in censuring men or things should append their names. This is manifestly so fair that it needs no attempt at proving, and I daresay it is all that Mr. Paul contends for. But while I lay down this rule for my own guide, and act up to it, I shall also act pretty closely to another, and not append my name to anything personally commendatory of one man above another. For instance, were I to bring to public notice some splendid Vines which I can see every day, and of whose parentage Mr. Paul might be proud, and to append my name, that eminent nurseryman might possibly not complain of my doing so, but Mr. Pearson might perhaps question my motives, because the same house contains some from him equally good, but yet unnoticed. Some men's names are of greater strength than their judgment. At present the general rule stands thus—to give one's name when we praise, and to withhold it when we blame. I am aware there are many exceptions, but it seems to be the rule, and in my humble opinion it would be as well for all parties if it were simply reversed.

Having expressed my thoughts, I will leave the subject to clearer heads and abler pens than mine, and venture a word of comment on the schedule of prizes offered through the Royal Horticultural Society by Messrs. Carter & Co., seedsmen, Holborn. Every year something fresh is brought forward, startling in character and price. It is but natural that the growth and maturity of these new-born subjects ushered into the world with everything that can make them attractive are jealously watched by a criticising and discriminating public. It is right that it should be so, but woe be to the proprietor if they found a character for any of their *protégés* on the results achieved in an abnormal season, and which are not upheld under other aspects and other circumstances. It is right that new subjects should be assailed, and have their bad points mercilessly brought forward—if a thing cannot stand the fire of public criticism it will not fulfil the demands of public utility. I have been their assailant, and probably shall be again. But if it is right that faults should be exposed, it is equally right that virtues should be recognised. That many subjects possess virtue there cannot be a doubt, or the experience of the best cultivators and the judgment of the best authorities go for little or nought. Who that has seen the Alpha, Wonder, and Hundredfold Peas grown under favourable circumstances can fail to recognise in them points of merit of sterling quality? while Potatoes, and even salads and Parsley, have left their mark on the horticultural world. If Messrs. Carter reap the reward of their enterprise it is only what they are entitled to, and if the world is benefited who should begrudge it? At any rate, it is clear they have confidence in the strength of their introductions, or they would not have deliberately adopted such effectual means of exposing their weakness as to offer nearly £50 for the bringing together of their productions and submitting them to the examination of the most competent judges. It is to be hoped the liberal offer will have a liberal response, and those who offer and those who contribute will alike reap a reward from their venture, and general horticulture be collaterally advanced.—W. B. H.

PROGNOSTICATION OF THE PRESENT WINTER.

In last November's number of "Symons's Monthly Meteorological Magazine," Mr. G. D. Brumham, Cirencester, observed that according to a law which for the last hundred years "has *always* proved correct, the coming winter must be remarkably severe—that is, the mean temperature must be very considerably below the average." The law Mr. Brumham stated in the December number of that Magazine is this:—

"When the rainfall of the first seven months of the year is below 10 inches (near London, or at Lyndon in Rutland), or there have been in the first eight months of the year three or more months in each of which the rainfall has been below an inch, the succeeding winter is *always* remarkably severe, if the Greenwich mean temperature of August to October inclusive has been not more than 56°.1 in the former case, or in the latter more than 53°.4."

How the prognostication has been and is being fulfilled we all know, and we have had this note sent us on the subject:—

"I am bound to confess that I have not much faith in weather prophecies in general, so many have been put forth without much foundation to rest upon, have flourished for a time, but soon come to an untimely end, but this, certainly, seems more promising than anything we have seen for a long time, and up to the present period has been remarkably fulfilled, and also has the merit of having been issued before the commencement of the winter, and not in ambiguous language, after the manner of the old-fashioned almanacks by which people might be rendered wise after the event.

"This prophecy, like all others, must stand the test of time, and if found sound will be a valuable acquisition to our meteorological knowledge, and will reflect credit on Mr. Brumham, the discoverer. Whether it continue successful in future years or not I regard it as a step in the right direction, and a line of investigation which should be followed. No doubt the variations of the weather, which appear so strange and unaccountable to us, are not really so, but proceed according to certain fixed

laws, and if we only had a key to them it would be possible to predict the character of the season beforehand with the regularity of a clock; but at present we are far from that happy state of affairs, and are waiting for some meteorological Newton to appear and settle a few of the knotty points for us. Does the moon influence the weather? The French *savants*, after investigating the matter for a long time, came to the conclusion that she did not affect the weather at all. Perhaps it would have been better if they had reported that they could not find out how she affected the weather. The American captains who fetch guano from the South Seas say that the moon does affect the weather, and that there is more rain in certain phases of the moon than in others. Is it not more reasonable to suppose that she does, and that the changes in our atmosphere are caused by the relative position of the sun, moon, and other planets? I think so. It is clear that the tides are affected by the phases of the moon; why not the weather?

"But to return to the prophecy. If the data are sound, no doubt there are reasons which may be shown for their existence. Dryness and low temperature in the early months of the year seem to be the desiderata for cold. Perhaps under these conditions the ice and snow may be less melted in the Arctic regions than at other times. It is certain that in 1868, when there was an unusually warm spring and summer, accompanied with more rain than in 1870, and when the temperature in Iceland in June was as high as it usually is in August, and when ship captains reported that the ice belt round the Pole was driven back further almost than in the memory of man, the warm summer was followed by a very mild winter, and the north-east wind seemed shorn of its usual rigours. Were the previous heat and rain the cause of it? Mr. Brumham, perhaps, would say, Yes; I would rather say, Wait and see if the conclusions arrived at in the table are borne out in future years, and then the investigation of the cause will be likely to add still further to our limited knowledge of the laws of meteorology.—AMATEUR, *Cirencester*."

SOME PREDATORY INSECTS OF OUR GARDENS.—No. 3.

AN entomological friend of mine, whose spite towards gardeners generally is probably to be attributed to the circumstance that in the course of his researches he has come at times into collision with various species of that genus, takes upon him to assert that the majority, large as are their opportunities for observation, have done little towards increasing our stock of facts in natural history. I think, however, that if we look back on the records of the past we shall admit that in matter and in style, what horticulturists do now communicate to our journals from time to time, throws quite into the shade the meagre descriptions which were once thought of value. Still there is scope for improvement, especially amongst working gardeners, and we may hope that, through the impetus given to education by its being regarded as of national importance, natural science and its concomitants will be so taught as not to disgust, but to stimulate the youthful mind, and prepare it for making discoveries on its own account when the after-life gives opportunities. One thing, certainly, caused some difficulty in other days—there were few journals through which facts in natural history could be brought before the public. Some communications came out, however, in the "Gentleman's Magazine," and strange enough they were, for "Sylvanus Urban" was decidedly non-scientific. I quote two amusing specimens of the sort of thing that went down with the reader of a hundred years since. A certain "J. H.," writing an alarmist's letter from Cambridge in 1763, says of insects, that "the embryos of these rapacious animals are now quickening by the rays of the vernal sun. The caterpillars that destroy the trees and hedges glue their nests to the branches. The web is woven with a close texture, and covered with a viscous liquor. In hot weather an effluvium exhales from caterpillars, which is noxious both to man and cattle, and sometimes produces contagious diseases." This is of a general cast; of more particular observations, if such they can be termed, we have such as that written down by "D. J." in 1766. His gardener in digging discovers a mysterious roll. This is opened, master and man both agape with astonishment—behold! a mass of desiccated matter resembling chewed grass, compacted together, 7 inches long, 1 broad, terminating in a blunt end, tenanted by what he calls a single egg, about which the substance was looser. The oddest part of the letter states that a hunt was instituted for the insect which had made it, and the sagacious discoverer could not understand why, after its trouble, it had not waited to see the result! This was probably a nest of some species of solitary bee.

It is possible, however, some may think that in horticulture ignorance regarding the numerous insect pests which mock our labours has some advantages. We reduce the numbers of the enemies we see and can get hold of, but how many are there which work us trouble and yet evade us! Then occasionally there suddenly appears some new blight, and the reflective visage of the gardener, full of insect lore, lengthens as his imagination pictures the divers annoyances it may inflict, which he cannot totally prevent. Increasing knowledge we must increase sorrow, is a reflection, however, that may be pushed too far; in natural history our great danger is a sort of half knowledge, which enables us to talk but gives us little insight. Thus, one who thought himself thoroughly acquainted with caterpillars and their destructive doings, had yet no idea that any were to be found waiting quietly through the winter to recommence their jaw work in spring. It is true of various species in gardens as well as in fields and woods, and an unpleasant lurker of this sort is that producing the Gothic Moth (Mœnia typica). The parent Moths are on the wing often for a couple of months in the summer, coming eagerly enough to an ensnaring sweet compound spread on tree trunks even about London, and in spite of its commonness it deserves to be called handsome. It has been observed by Mr. Newman that the juvenile caterpillars proceed with a certain degree of military regularity, marching in little companies, and confining themselves to the upper surface of the leaves. My own observations confirm this, though, unlike Mr. Newman's specimens, those occurring at the west end of London do not always begin by a short sojourn on trees ere they descend to the lower growth in gardens. I have found eggs and young caterpillars on low plants, nor do they hesitate to devour the produce of the flower as well as that of the kitchen garden. These caterpillars seem to have at all times a partiality for dead leaves—they often hybernate on or amongst them; and, when feeding some in captivity during the spring, I noticed that they ate chiefly at night, hiding under a dried leaf during the day. Hence the species escapes notice in gardens at the very time it is most destructive, and slugs and snails are anathematised occasionally, while the culprit is our Gothic foe, now getting plump, and who would perhaps wink his eyes, if he had any eyelids, to express his satisfaction at the good fare he obtains on the fresh juicy leaves. However, as, by-and-by entering the earth, he becomes a chrysalis, he may chance to get chopped in two by the spade or hoe. From the small proportion of these caterpillars to be found by careful searching in some springs as compared with the number about the preceding autumn, I fancy that they are kept in check by some parasite, or killed by the sharp weather of certain seasons.

Who has not some early associations connected with the Woolly Bear? though this name is applied loosely to various

Chelonia Caja.

hairy caterpillars. I think, however, that it could be demonstrated to be the peculiar property of the common Tiger Moth (Chelonia Caja), the only probable rival being the caterpillar of the White Ermine. An active fellow is the Tiger Caterpillar, though its long silky hairs, as seen at the final change of skin, have nothing resembling wool about them except their light colour on the back. The head and legs are of a deep black. Nor is it remarkable for being bearish in disposition, though it may be thought a feeble miniature of that animal in appearance. An observer, however, reports last year an instance wherein a Tiger Caterpillar proved a cannibal, devouring a chrysalis of a brother; but then there was this excuse, that the individual had been kept on short commons, and, to all

caterpillars, abstinence in warm weather is very trying. It has been questioned whether birds attack hairy caterpillars. No doubt some species do, though others are repelled by this means of defence, especially when the individual attacked has the power, like the present species, of presenting, by rolling into a ring, a surface of hairs in every direction. Were it not for this, as the Tiger Caterpillar feeds conspicuously, its numbers would soon be diminished considerably. As it is, we notice it to be one of the very commonest of caterpillars both in gardens and in uncultivated places, its favourite food-plants in the latter spots being Docks and dead Nettles. Most partial to the kitchen garden, the caterpillar of the Tiger Moth at times turns up on the flower beds, and may even be detected feasting on fruit trees, or disfiguring a choice Pelargonium. One circumstance tending to account for its abundance is the number of eggs deposited by the Moth (stated in some books at 800 or 900; in a case, where I counted what I believe was the whole batch of a female in confinement, the number was about 600), and these are laid in clusters through the sluggishness of the Moths; in fact, they seem rarely to take any extensive flight. The principal business of the young caterpillars during the autumn appears to be the changing of their skins; of these several follow in succession without much increase of size. Ceasing to eat as winter approaches, they retire usually to the roots of the herbage, or, in gardens, to some nook or cranny, there to remain until spring, at whose advent they at once set to work again, but, growing rather slowly, are seldom full fed until June. The cocoon is plentifully besprinkled with the hairs of the caterpillar, which have an unpleasant irritating effect upon the human skin, though this has been questioned, and the effect ascribed to some fluid of a pungent nature ejected by the caterpillar. Certain it is that the Moth when fresh from the chrysalis does possess the power of ejecting, from some apparatus behind the head, an acid liquid which causes smarting. The upper wings, which have given the species its tigrine name, are variable in their marking, as also sometimes the hind wings, usually adorned with blue-black spots on a red ground. An entomologist reared some of the most remarkable types of the darker varieties by feeding the caterpillars on Coltsfoot and Butterbur. Nevertheless, it is the opinion of a moiety of the students of this branch of natural history, that these departures from the normal colouring are results of disease.

Amongst the names of terror in Eastern lands, none are more appalling to the husbandman than that of the Locust. Only three years ago we find that the ravages committed in Algeria by the species were something appalling, though millions of them were slaughtered. The term Locust is applied even in our country in a loose way to various destructive or conspicuous insects, as, for instance, singularly and inappropriately, to the caterpillar of the Death's-head Hawk (Acherontia Atropos), not uncommon at times in the midland counties, an occasional visitant in others. But the question has been often asked with some interest, Does the oriental Locust ever make its way here, and is there any danger of its doing us serious injury? Many specimens of the Orthopterous order had been sent from different places to the Editor of the "Entomologist," who stated that he had doubts whether the true Locust did occur in Britain. Mr. Walker's researches, published in last year's "Entomologist," tend to prove that there are two species, and one of these, the Migratory Locust of South Russia (Pachytylus migratorius), which also occurs in Switzerland, the South of France, and Spain, has occasionally made its way to our shores. There seems to be still some doubt whether this species commits ravages in Syria and Egypt. A number of these were noticed on the coasts of Aberdeenshire, and solitary specimens have been picked up elsewhere. At the discussion which took place at the meeting of the Entomological Society in March last it was asserted that examples of the true African Locust had been taken here, but the nomenclature being confused, the fact is still questionable. In our case I imagine we have little to fear from this species, which, in spite of the long migrations it makes, is peculiarly liable to be affected by atmospheric influences.—J. R. S. C.

NOTES AND GLEANINGS.

According to *Nature* the large conservatory for Orchidaceæ in the Jardin des Plantes at Paris has been destroyed by a Prussian shell. The glass-work was broken, and the plants, which are so delicate, were lost without any hope of recovery. The losses are very serious, as the collection had many valuable specimens obtained from the occupation of Mexico, and from the exertions of the French Scientific Commission, which had been sent to America to explore the empire of the unfortunate Maximilian. M. Chevreuil, the Director of the Museum, has addressed to the Academy of Sciences the following protest:—"The garden of medicinal plants, founded in Paris by an edict of King Louis XIII., dated January 3, 1626, became a Museum of Natural History on the 23rd May, 1794. It was bombarded in the reign of William I., King of Prussia, Count Bismarck being Chancellor, by the Prussian army, on the night of the 8th-9th January 1871. Until then it had been respected by all parties, and by all national and foreign authorities. Paris, January 9, 1871." The Academy has determined that the protest of M. Chevreuil shall be printed at the head of its reports, and the Committee of Professors of the Museum have decided that a marble monument, with an inscription of the protest, shall be placed in one of the galleries of the building, surrounded with projectiles thrown from the enemy's batteries.

—— Amongst the new arrangements made by the Royal Horticultural Society for the present season we have to announce the following:—Mr. Eyles, Superintendent of the Society's garden at South Kensington, retires from that office, and is succeeded by Mr. Barron, who will for the future act as the Society's Garden Superintendent at South Kensington and Chiswick, thus combining the management of the two gardens in one. The position which Mr. Eyles will retain is that of Superintendent of Flower Shows, in conjunction with his profession as a landscape gardener.

—— Messrs. Carter & Co., Seedsmen, Holborn, have offered the following Prizes for Vegetables grown by *bonâ fide* gentlemen's gardeners, or gentlemen amateurs, without forcing, in the open ground, to be awarded at the meetings of the Royal Horticultural Society during the present year—viz., *May 17th.*—Prize £1 10*s.*, for the best dish of Carter's First Crop Pea, 1 peck. Prize £1 10*s.*, for the best dish of Early Peas, not First Crop, 1 peck. *June 7th.*—1st prize £2 2*s.*; 2nd £1 1*s.*, for the best three dishes of Peas (to include Alpha and Invicta)—*i.e.*, Early White, Early Round Blue, and Early Wrinkled Peas. *June 27th.*—A silver cup or £10; 2nd prize £2, for the best collection of Vegetables, including Laxton's Supreme, Carter's Hundredfold, Laxton's Quality, Dwarf Waterloo, and two other varieties of Peas. *July 5th.*—1st prize £2 2*s.*; 2nd £1 1*s.*, for the best six dishes of Peas, to include Laxton's Supreme, Carter's Hundredfold, and Laxton's Quality. *July 19th.*—1st prize £2 2*s.*; 2nd £1 1*s.*, for the best collection of Vegetables, to include three dishes of Peas (including Carter's Imperial Wonder and Laxton's Supreme), Carter's Improved Garnishing Parsley, and Carter's Giant White Cos Lettuce. *August 16th.*—1st prize £2 2*s.*; 2nd £1 1*s.*, for the best collection of Vegetables, to include Carter's Champion Runner Beans and three dishes of Peas (including Carter's Imperial Wonder and Carter's Wonder of the World). *September 6th.*—1st prize £2 2*s.*; 2nd £1 1*s.*, for the best collection of Onions, to include the New Giant Rocca of Naples, Giant White Tripoli, and Neapolitan Marzagole. *September 20th.*—1st prize £2 2*s.*; 2nd £1 1*s.*, for the best collection of Vegetables, to include Carter's Dwarf Crimson Celery, Carter's Dwarf Mammoth Cauliflower, New Giant Rocca Onion, Kohl Rabi, three dishes of Peas (to include Carter's Imperial Wonder), and Carter's Perfection of Beets. *October 4th.*—1st prize £2 2*s.*; 2nd £1 1*s.*, for the best collection of American Potatoes, six varieties. *November 1st.*—1st prize £3 3*s.*; 2nd £2 2*s.*; 3rd £1 1*s.*, for the best collection of Potatoes, to include Carter's Ashtop Fluke, Cambridgeshire Kidney, Red-skinned Flourball, and Carter's Main Crop. Prize £1 1*s.*, for the best dish of Carter's Main Crop Potato. *December 6th.*—1st prize £2 2*s.*; 2nd £1 1*s.*, for the best collection of Vegetables, to include Carter's Little Pixie Savoy, Scotch Kale, Brussels Sprouts, Carter's Garnishing Kale, Parsnips, Scorzoners, Salsafy, and Leek.

THE LATE SEVERE WEATHER.

Mr. Adderley (page 66) calls attention to the injuries inflicted by the late severe weather, and, no doubt, facts will be revealed which are difficult to understand, for while he records the temperature with him at 1° below zero, on December 24th, none of the thermometers here (and there are three or four of them) descended below 13°, while less than a mile from us a temperature of 5° was registered, and at Tunbridge it had been down to 1°. At some places near Maidstone, 1° or more below zero was registered, and near Malling it is said 4° below that point. Now, a difference of 16° or 17° at places so near to each other is difficult to understand, altitude not always accounting

for it; and the effects produced show as well as the instruments that there has been a great difference, for while Mr. Adderley describes his shrubs as all but killed—a fact confirmed by others near here, where the temperature has been as low as with him—ours at Linton do not as yet exhibit any symptoms of having been injured. A few days ago, on examining the bloom-buds of Laurustinus, I thought they were not sufficiently injured to prevent them expanding at the proper time; but it may be too early yet to make sure of that, for at the time I write, January 27th, there is as much appearance of severe weather as a month ago.

It is singular that extreme cold should exhibit itself so capriciously—heat certainly never does, a difference of 2° or 3° is all that under ordinary circumstances occurs in the same exposure, &c., and is met with in places a few miles apart, while I believe differences of as much as 20° have been experienced during the past cold weather. Perhaps the almost entire absence of wind on the late cold nights had some influence, as a good breeze must mix one cold portion of the atmosphere with another that may not be so cold, and so produce a greater uniformity of temperature. The lowest reading of our thermometer at any time during the last twenty years was 6°, on March 10th, 1855, and 10°, on January 5th, 1867, while the memorable Christmas day of 1860 was only 15°, yet we suffered much that season, owing, however, to the unripened condition of vegetation when the frost set in, but not so much as in 1867. This season, with the prospect of more winter before us, it is too soon to say much, but so far, I believe, we have escaped with less damage than most of our neighbours, but when more certain of this I will probably revert to the subject. Meanwhile, it will be interesting to know where the most severe weather has been. A friend writing me from Cornwall says the thermometer there has been down to 14°, an unusual occurrence for that part of the country. In the midland counties, where we usually hear of the most severe frosts, it does not appear to have been so intense as nearer the east coast, neither does London appear to have been visited with such hard weather as many places in Kent. These and kindred matters are fitting subjects for inquiry, and when the time comes to reveal the damage done it is to be hoped the readings of the thermometer at each place reported upon will be given also. The fact of the ground being partly covered with snow was of much service to vegetables, the most damage to them being done after a partial thaw had set in about January 6th. The frosts that followed, though not so severe as before, certainly did more harm than those preceding that time.—J. Robson.

COMMISSION PAID BY TRADESMEN TO SERVANTS.

"A Tradesman" has written to us on this subject—a very important one—but we do not see what benefit would result from a discussion of the practice in our pages. Such discussions have already taken place, with little or no beneficial result, for though some gentlemen and tradesmen have manfully opposed it, others have tacitly or openly given it their approval, and too many employers look upon allowances on bills as making up for the deficient remuneration they give to their servants.

Not long ago a nurseryman told us that a gentleman in giving him an order said to him, that as it was near Christmas or bill-paying time, he must give a greater allowance to the gardener. "A Tradesman" justly states, the only right plan would be for employers to give remunerative wages, and oppose all such gratuities, and for tradesmen to join in resolving not to give them—but will they do so? It is quite a mistake to suppose that the gentleman gains in the long run, for if the tradesman pays so much in discount, he must contrive to get that extra somehow. All such allowances are very pressing in these days of close-cutting contracts. The whole system has a tendency to put a temptation in the way of all concerned to veer somewhat from the straight line of rectitude, and it is most desirable that we mortals should not have inducements to wrong-doing put in our way.

As to a gardener making a demand as a right of 5 per cent. on the cost of houses erected, we hope he will think twice before he persists in the demand. A gardener of some years' standing tells us he has had enough of self-respect to keep him from condescending to ask for a penny from his employer's tradesmen. There are, however, generally two sides to a tale. We have known cases where the intellect, the experience, and the extra time of servants had been fully employed by a tradesman, and without these that tradesmen could not have done the work at all, and yet not a hearty "thank you" was returned as an equivalent. In such cases, we think it is honest and fair that for such extra labour there should have been a tangible equivalent.

The gardener we have referred to says, "I can bring to my mind's eye a case of a great deal of work, building, &c., being done in a garden, and the gardener, feeling interested in the whole matter, did very much for the tradesman—what he would otherwise have been obliged to employ a clerk of the works to superintend, and did all this at his request. The gardener fairly thinking that he deserved something for his great extra labour, spoke, and we think rightly, to his employer; but was at once told it was no business of his, it was entirely a matter for the tradesman. Like many more of the most respectable servants, who would be glad to see the whole system of discounts and gratuities swept away, he was too proud to say a word to the wealthy tradesman who had freely used his time and abilities, and the only thing he ever received was half a sovereign to give some beer to the garden men. No doubt such are exceptional cases. I dislike the whole system of gratuities, but at the same time I think that extra work with head or hands should be fairly paid for."

On the whole, until gentlemen unite to set their faces against the system, until they cease to demand their 5 per cent. discount when they pay their own bills, until they give suitable wages, independent of all such degrading gratuities, and until tradesmen cease to encourage the system, and even outbid each other to obtain a job, we can only regret so great an evil.

WORK FOR THE WEEK.

KITCHEN GARDEN.

Attend to the drainage of the garden, for at this season, when it is frequently requisite to fork and turn over ground previously trenched, it is easy to perceive the great importance of efficient drainage. I allude, of course, to soils which require draining, because some do not. How the earth crumbles down and mellows, and how much sooner it is in a fit state for cropping, when the drainage has been properly attended to. If the soil is undrained, the labour is far greater to get it in anything like condition for the reception of crops, and even then the advance and produce of the crops committed to it are greatly inferior. A thoroughly efficient system of drainage is the basis of all successful cultivation. Continue to manure, trench, and fork over the ridges whenever the weather will permit. Fill up any vacancies in the autumn plantation of *Cabbages;* also make fresh plantations of the autumn sowings, if necessary. *Cauliflowers* under hand-glasses and in frames must be fully exposed in mild weather, or they will button off in the spring. Sow seed on a south border to produce plants to succeed the autumn sowing. Sow *Celery* seed in boxes, and place them in a forcing house to produce plants for an early crop. Where the soil is not wet and stiff, *Garlic* and *Shallots* should now be planted, if not done in the autumn; plant in rows at 6 inches apart. *Lettuces* in frames should have all the air possible in mild weather; make a sowing on a south border to succeed the autumn sowing. *Potatoes*, where there are no frames or pits, plant on a south border for an early crop. Pots may now be placed over the roots of *Rhubarb*, and covered with dung or leaves. A small sowing of *Spinach* may be made between the rows of early Peas. Where young *Turnips* are required early, a sowing should be made on a slight hotbed.

FRUIT GARDEN.

Examine Fig trees covered up, and see if the mice have gnawed off the bark from the stems. Traps should be set in different parts of the garden to catch them. They will now more readily take the baits than they will when there is other food for them. Pruning and nailing Peaches, Nectarines, and Apricots, may be followed up with vigour and perseverance whenever the weather is favourable. Wall fruit trees of any kind that are becoming crowded with wood near the top of the wall should have some of the large branches headed back, and the shoots trained below. Do not crowd the centre of fan-trained trees with too much wood, that part will always fill up enough.

FLOWER GARDEN.

There are few things in gardens we are more dissatisfied with than the usual mode of planting shrubberies; there is generally no attempt at arrangement, and where this is neglected at the time of planting, no after-thinning or removing, short of taking up the whole of the plants, will give them the effect they should produce. In planting shrubberies, those plants which are intended to remain permanently should be first planted, and at such a distance apart and from the walks, as not in any way to interfere with one or the other for, say, ten years. This will allow many of the plants to attain a large size, and to show their proper character. The intervening spaces may be filled up with whatever plants may be at hand, and as they encroach upon the permanent plants they should be removed. Shrubs will not then require pruning, which, with digging about their roots, is the worst practice that can be followed for the production of handsome plants. Take every opportunity to forward the ground operations in this department. Now is an excellent time for the formation of beds of Bourbon, China, and Tea-scented Roses. These classes of Roses will flower throughout the summer and autumn months; they give little trouble after planting, and they deserve to be cultivated in preference to many annuals which we frequently find in flower gardens. To have them in perfection it is necessary to take the soil out of the beds to the depth of 12 inches, fill up with rotten dung from an old hotbed or any

other source, tread it firmly as the bed is filled up, place 3 inches of soil on the dung, and plant in the usual manner. Prepare beds for Carnations and Pinks; strong turfy loam, with rotten cow dung or sheep's dung, forms an excellent compost. Have the Pansy beds in readiness; choose a strong rich soil in a shady situation if the blooms are wanted in a state of perfection. Top-dress Auriculas and Polyanthuses with light loam made rich by the addition of rotten cow dung. This is a good time to take off the offsets before top-dressing; plant from three to four in a 5-inch pot, and place them in the shady part of a frame. Sow seed in shallow pans, and place them in a cold frame. Place Dahlia tubers in a little heat to start shoots for cuttings.

GREENHOUSE AND CONSERVATORY.

Attend to former directions as to the temperature and ventilation of the conservatory, guarding against extremes during the present piercing weather, and taking care, by moistening the heating apparatus twice or thrice a-day, and some of the vacant places about the house, to make up for the loss of moisture which will now be deposited on the glass. Flowers will not keep in dry air, therefore you must pay some attention to the hygrometric state of the atmosphere. Remove the plants to the house as fast as they come into bloom, altering the arrangement frequently so as to impart a fresh appearance to the display. Return all plants to the stove or greenhouse as they go out of bloom, and such plants as Euphorbia jacquiniæflora, Poinsettias, and others, which have done blooming, may be set aside and kept comparatively dry for a time. It may, perhaps, be necessary to top-dress or renew the soil around some of the borders; if such be the case, let it be performed before the end of the month, and give the plants a good soaking of clear weak manure water at the same time. In the greenhouse, while the present severe weather continues, but little can be done with the specimen plants, except that they may be trained and washed; indeed, in smoky or dusty places the washing of large plants by laying them on their sides and giving them a regular deluging from a good syringe is a matter of considerable importance, and tends much to their healthy and vigorous growth. Proceed with the potting of young plants and small specimens of all kinds, using the soil tolerably rough, with plenty of sand and drainage, and keep them comparatively close until they make fresh roots. This is a good time to start a collection of Kalosanthes, potting them in a compost consisting of two parts sandy turfy loam, one part turfy peat, and one part of half-decomposed leaf mould, with plenty of coarse gritty sand, and a liberal admixture of potsherds broken small. Give them a liberal shift, and keep them in a temperature of from 40° to 50°, and as soon as they make fresh roots stop each shoot, and train the plants into form. If the weather is favourable endeavour to get all the plants which require it shifted by the end of the month, taking care to moisten the old ball properly before they are shifted, and also to guard against over-watering afterwards. Attend to the training of Tropæolums and other climbing plants, and shift the former into their blooming-pots, if not done already. Plants of Polygala or Boronia which are getting too forward must be placed at the cool end of the house, and others which are late must be generally excited—that is, if they are required to bloom early.

COLD PITS AND FRAMES.

Plants in these must be thoroughly protected, and if any of them get frozen let them be thoroughly thawed before exposing them again to light. Give abundance of air at all favourable times, and endeavour to keep the air as dry as possible. Look to Liliums now breaking through the ground, and take care that they are not injured by stagnant moisture about the young shoots.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

WE have had another week of frost and snow, in which but little could be done out of doors but wheeling and turning soil, and digging when the snow had left us for a time. In the way of protection, young Cauliflowers under hand-lights have only seen the light for a short time when there was the appearance of a little sun. On the whole such vegetables have stood well. Many other things have been treated the same way, and trouble has been saved in uncovering, and the plants do better than when exposed to sudden changes as respects cold and excitement to growth. Many vegetables, as old quarters of Cabbages, have suffered much, and would have suffered more but for the slight falls of snow that gave them some protection. It will be wise policy to sow Cabbages, Lettuces, &c., in a little heat, to provide for what may yet take place, as a rising barometer and a keen north wind would seem to imply that the frosty weather is not yet over.

We have lots of Potatoes grown a few inches in pots, and we would have been glad to have turned them out into beds, &c., but we had not a single day in which it was warm enough to do so with safety. It is remarkable how soon a *sudden chill* will affect plants for a long period. This is a simple matter that many people cannot be brought to see. In fresh potting, planting, &c., plants that have received anything like nursing treatment should be removed from it as short a time as possible, and if changes must be given as respects temperature they must be gradual. As a general rule, when plants are removed to a shed to be potted, the shed some degrees above freezing, say from 40° to 45°, they should be taken back again as soon as possible. How often does it happen that scores are thus treated before being taken back again to the houses, when it would be more workmanlike in every way to take only a few out, replace them, and then bring back more. It may seem stretching the point too far, but we honestly believe that allowing plants to stand exposed for two, three, or four hours in a place 20° or 30° colder than that whence they came, instead of for the shortest possible time, gave the plants a severe check, and necessitated many a puff of tobacco that otherwise might have been saved. Not long ago a gentleman told us he could have bought all the flowers he had grown for the amount the frequent smokings cost him. We have frequently known plants standing in a temperature of from 55° to 60° taken into a shed at 40° the first thing after breakfast, and after repotting left standing there until far in the afternoon. Why, the very potting would give a check if the soil was at all colder than the temperature of the house—that would be check the second; and the diminished temperature of the shed for so long a time would be check the third; and if coolish water instead of water at from 60° to 70° was used, that would be a fourth check; and yet people are amazed when the once-fine leaves get covered with insects, and washings and smokings must be resorted to to keep the plants alive. Plants are just as sensitive to extremes of temperature as we are, and even much more so. We would not like to expose the growing shoots of even a Potato in a frosty day, and in such matters a little delay is often, after all, time and future well-being secured.

A supply of Rhubarb, Asparagus, and Sea-kale is a great help now, when, for the present at least, we cannot say much as to the gathering of Broccoli out of doors. As lately stated, all the three may be grown anywhere in the dark, provided a little mild heat can be obtained. The Asparagus must be greened by exposure to light afterwards; but Rhubarb, if not allowed to grow more than 8 or 10 inches for the large kinds, and shorter for the smaller kinds, does well without any light, and cooks not only very tender, but crisp and firm enough for anything. When drawn up long it becomes watery, and at times a little stringy. Those who have Swedish Turnips may get blanched or green tops by placing the tubers in a little heat. These make a delicious vegetable in winter.

FRUIT GARDEN.

Planting, if to be done, is quite out of the question. Even though trees could be taken up and laid out, and thus covered, there has not been a day of late but the exposed roots would have been frozen, and that is a thing that never takes place in nature as respects the bulk of our fruit trees. If the frost does reach the roots it reaches them very gradually, and there is darkness and the covering over them, instead of the direct exposure.

Pruning Fruit Trees.—We did a little on the most favourable days, and must hurry on as soon as the weather is at all fitting, as other out-door work for which the weather was very suitable prevented our doing more in this direction. Pruning is work that can be done at any time, when at all fair overhead, and felling trees, and grubbing up, are excellent work for cold, frosty weather in winter. Would there were more of such work to be done in this district. It is sad, indeed, to see so many men anxious to get employment, and unable to find it, in this severe weather. We fear that many of our labourers have suffered as much from scarcity of food, of fuel, and of clothing, as the beleaguered Parisians. What can we expect, when the weekly wages can do little more than secure very moderate comforts, if these wages altogether, or nearly so, cease for six or eight weeks at a stretch? It is all very well to speak of improvidence when all is prosperous, and to show that by care-

fulness and prudence there would have been loaves in the cupboard instead of empty shelves; but unfortunately referring to the past will not bring the bread, to say nothing of the beef, for the present. The greatest kindness to such people would be to give employment, and, in some cases, a little advance to the most distressed. In many places a good deal could be done at such jobs as those referred to above, with great benefit to the employed, and often to the advantage, or, at least, the no great loss of the employer. What is thus spent in labour will in its results be a very different affair from that given in mere charity, either personally or through clubs and societies.

Strawberries in Pots.—On some of the coldest nights, besides old sashes, we threw a little litter over the pots. The frost, however, has never injured us to the extent that mice and rats have done. We have already lost some scores of pots from the buds of the plants being eaten out, and that independently of rings of tar round the beds, trapping, and even shutting cats up where the plants were. Our losses this year, however, are small in comparison of what we have suffered in some seasons. Forward pots will be all the better of having the blooms dusted, using fine feathers, a camel's-hair pencil, or even a dry hand gently. As lately alluded to, plants coming on gradually, and not yet showing, should be rather under-watered, and no water should stand in the saucers. Hence beginners will be safer if the pots merely stand on boards.

Peach House.—Owing to alterations and fresh work in other houses, our Peach house is so crammed with plants above and below, as scarcely to give 1 foot of path or moving room. Hanging and other shelves have been so relieved as to permit of Strawberry pots being placed on them, and the fruit trees, from the heat used to keep all the plants safe, are coming into bloom near the heating medium. For the last fortnight we have scarcely had an hour's sun all put together, and, therefore, to fertilise the forward blooms, a thin piece of wood, to act in the way of a fan, has been waved over and close to them, so as to help to disperse the pollen, and some very soft feathers, as from the breast of a partridge, have been used for the purpose, as specified above for Strawberries. These modes are chiefly required in such very dull weather, and they will be most effectual in securing their object when the sun peeps out, if only for a few minutes. Nothing can quite make up for the want of the sunbeam in such cases, but something may be gained by the modes referred to, and still more by a low temperature in proportion to the weather securing strong blooms, instead of weak ones in a somewhat high temperature uncounteracted by the strengthening rays of direct light. In such weather we would rather have a Peach house below 50° than above it at night, with a rise of from 5° to 10° during the day; but if the day was sunny, and air given early, however little, and the rise in temperature gradual, we would not object to a rise, from sun heat alone, to from 5° to 25° higher. We would far prefer that gradual rise to admitting great blasts of cold, frosty air. In such cold, unsettled weather, when fire heat must generally be resorted to in the morning, the chief danger will come from a strong fire heat and a bright sun heat being allowed to act together, and this can only be prevented by the care and attention of the person who, in firing and air-giving, attends to the houses. When sun is expected it is always well to let the fire heat become gradually reduced as the sun gains power, and the fire heat again begin to tell as the sun heat declines.

ORNAMENTAL DEPARTMENT.

Here the chief work of routine, as alluded to in previous numbers, has been cleaning, attending to plants in houses, bringing forward Roses, Deutzias, &c., and bulbs in heat, taking off and inserting cuttings of plants, of which great quantities will be wanted in summer, and preparing for sowing such annuals as Lobelias and Petunias. Preparing for slight hotbeds has also occupied some time.

TO CORRESPONDENTS.

N.B.—Many questions must remain unanswered until next week.

Books (*Auricula*).—You can have the three books you name free by post from our office if you name them, enclose eighteen postage stamps, and send your address. (*M. G.*).—Keane's "In-door and Out-door Gardening" contains complete monthly directions for in and out-door gardening. You may have the two volumes per post from our office for 3*s.* 4*d.* in stamps.

Tax on Gardener—Gun License (*Constant Reader*).—You must make a return of your gardener on the schedule of taxes. Unless you take out a game certificate, you must have a gun license to entitle your gardener to shoot small birds.

Foreign Nurserymen's Prices (*G. S.*).—We are quite aware that they are much lower than those charged by nurserymen in England, but unless plants are purchased in large quantities the expense of carriage renders those prices quite as high. Competition is so active here that if a living profit could be made out of lower prices, some nurserymen would soon adopt them.

Italian Seeds (*J. E. B.*).—We cannot name plants from seeds.

Red Lead on Seeds (*W. C. W.*).—It has no injurious influence in any way. The subject was remarked upon in our eighteenth volume.

Acorns in a Bottle of Water (*J. B.*).—They are only so treated as a curiosity, so you may keep them there as long as you please.

Peaus Decaying at their Cores (*Europa*).—Some varieties are more prone than others to blet like their near relative the Medlar, and those you sent are two of them. No reason has been assigned for this. If ripening was hastened by keeping the fruit warm and in the light, the exterior might ripen before the interior began to blet.

Palm Seeds Sowing (*Delta*).—The kinds you name, like all the tribe, are easily raised from seeds, but these are slow in vegetating. They may be sown now singly in small pots in a sandy-peat compost, and the pots should be plunged in a hotbed at 85° or 90°, and if there is a top heat of 70° to 75°, with a rise from sun heat to 85° or 90°, they could not be better. The soil must be kept moist, and a close moist atmosphere is desirable. They may vegetate in from six weeks to three months, but, if they do not, have patience.

Abutilon and Lantana Treatment (*Idem*).—The former is a greenhouse plant, so is the latter, but both may be used for flower-garden decoration from May to October. We presume they are now kept rather dry. In February, or early in March, prune them if at all straggling, cutting them pretty closely; indeed, we cut ours closely in, like a Rose bush, to two or three eyes, shake the plants out of the pots, reducing the ball considerably, and repot in a compost of light turfy loam, with one-third leaf soil, and a free admixture of silver sand. Liberal drainage is given, and the plants are sparingly watered for a time, but sprinkled overhead two or three times a-day with aired water, and when they are growing freely liberal supplies of water are given. The plants should be shifted into their blooming pots by the beginning of June. A light, airy position in a greenhouse suits them.

Melon for Frame (*C.*).—Your deep wood frame will be suitable for the hardier sorts of Melons. If you can command enough stable dung to fill the frame to within a foot of the glass, you will be enabled, from the bottom heat to grow Beechwood or Heckfield Hybrid, both good, free-setting kinds. We would fill the frame with the hot dung by the middle of April, and when it had settled down, or in a week, we would level it, and put in the centre of the bed a ridge of soil from 10 inches to a foot in depth, and with a base twice as great, covering the dung all over about 3 inches deep. When the compost is warmed through we would turn out the plants, one at every 2 feet, the end plants being 1 foot from the ends. This is better than planting two plants under each light. When the plants commence to spread their vines, add more soil, so as to cover the bed 10 inches deep. The best compost for Melons is a strong loam, and if turfy all the better. It should be chopped and made firm. No manure is necessary; but if you cannot obtain hot dung, then you may add to the compost one-fourth of well-rotted manure, mixing it well. Failing the hot dung, you will need to grow what are known as the hardy ridge varieties, and of those Achapesnorricher is the best. The plants should be raised on a hotbed, though the variety named will do sown where it is to remain.

Roses for Early Blooming (*H. Foy*).—Your plan of growing Roses in pots plunged in summer and winter, for early blooming in an orchard house, is quite feasible. We should advise their being grown either on the Manetti stock or on their own roots, and amend your list as under:—*Pole Roses:* Gloire de Dijon, Général Jacqueminot, Madame Charles Crapelet, Paul Verdier, Madame Clémence Joigneaux, John Hopper. *For Pots.—Hybrid Perpetuals:* Charles Lefebvre, Pierre Notting, Madame Caillat, Alfred Colomb, Boule de Neige, La Ville de St. Denis, La France, Senateur Vaisse, John Hopper, Duke of Edinburgh, Madame la Baronne de Rothschild. *Bourbon:* Souvenir de la Malmaison, Louise Margottin, Michel Bonnet. *Noisettes* same as list, Céline Forestier, Cloth of Gold, Maréchal Niel. In addition to these you ought to grow some *Tea Roses*—viz., Madame Bravy, Madame Willermoz, Madame de Vatry, Marie Ducher, Adam, Souvenir d'un Ami, La Boule d'Or, Alba Rosea. The best soil is the top spit of good pasture loam mixed with one-third good decayed manure, and a few bruised bones and pieces of charcoal; use sifted cinders as drainage.

Good Roses of Recent Introduction (*C. A. Smyth*).—Alfred Colomb Abel Grand, Berthe Baroo, Boule de Neige, Duke of Edinburgh, Elie Morel, Fisher Holmes, Horace Vernet, La France, Madame la Baronne de Rothschild, Julie Touvais, Mdlle. Marie Rady, Marguerite de St. Amand, Marie Baumann, Princess Mary of Cambridge, Monsieur Noman, Monsieur Woolfield, Xavier Olibo, Marquise de Mortemart, Madame Creyton, Thyra Hammerick, Adolphe Brongniart.

List of Roses (*R.*).—Instead of Madame Canrobert, Comtesse de Paris, Meyerbeer, J. Keynes, Alba Carnea, Exposition de Brie, and Alpaido de Rotalier, we should name Charles Lefebvre, Alfred Colomb, La Duchesse de Morny, Madame la Baronne de Rothschild, Monsieur Noman, Madame Caillat, and La France. The others in the list are very good.

Showy Climber for Greenhouse (*Idem*).—For winter blooming there is no better climber than Kennedya Marryattæ, a scarlet Pea-shaped flower, with handsome trefoil foliage. For spring and summer you might have Clematis Jackmanni, deep violet purple, or Clematis Sieboldi, lilac white with violet stripes. Nearly all the new Clematises are valuable as greenhouse climbers, and, being hardy, are not injured in severe winters. Tacsonia Van-Volxemi, with pendant (Passion-flower-shaped) scarlet flowers, is also a very free, showy climber, but requires plenty of space. Some of the Tropæolums of the elegans race are well worth growing as greenhouse climbers. The hardy Passiflora cærulea forms a valuable climber for covering a back wall, as the foliage is very ornamental, and it will succeed with a north or east aspect. If your greenhouse has an intermediate temperature we can recommend the old Plumbago capensis, with its soft French-grey flowers, as a very valuable plant trained as a climber, either for a pillar or back wall.

Cactus Culture (*Idem*).—Large Cactuses ought to be kept on shelves

near the glass, and dry at the roots, during the winter months. They do not require much pot room, and ought not to be repotted till after they have done flowering. Give water when they begin to show their buds, and do not let them want for water during the blooming and growing season. An intermediate temperature suits them best. Some of the Cactus tribe —the Cereuses, Epiphyllums, and others make good plants for hanging baskets.

Phalænopsis Bearing Young Plants (*A Reader*).—All the species of Phalænopsis do more or less freely produce young plants on their flower spikes after they have finished blooming, P. Lüddemanniana being the most prolific, and P. Schilleriana the shyest in doing so. Probably the reason the latter kind so very seldom produces young plants in this way is that the flower spikes nearly always die back soon after the flowers fade, and thus there is no time for the development of any latent buds, whilst the spikes of the other species live for several years. We have only once seen P. Schilleriana produce a young plant in this way.

Geranium Leaves Blighted (*H. A. K.*).—Your question was answered two weeks since.

Manuring a Lawn (*J. W. M.*).—Nothing would do your lawn so much good as dressing it early in March, or as soon as the ground becomes thoroughly thawed, with short manure. Spread it regularly, and let it lie until April; then, after a shower, rake the lawn with an iron rake—you need not fear damaging the grass—and this done sow over the lawn Suckling Clover (Trifolium minus) at the rate of 12 lbs per acre, and your soil being light and gravelly we would add 1½ lb. Bird's-foot Trefoil (Lotus corniculatus minor). Rake over lightly after sowing, and roll well with a heavy roller, but you must have the lawn in such a state that the soil does not adhere to the roller. An ordinary garden roller will answer. We think you will have a good lawn by the time hot weather sets in.

Melon for Exhibition early in June (*Idem*). — To have Melons ripe early in June we sow in the first week in February, and grow the plants in a pit or house heated by hot water. In a dung hotbed, ripening them at the beginning of June is very uncertain. Williams's Paradise Gem is a good early scarlet-fleshed kind, and Meredith's Hybrid Cashmere, a fine green-fleshed variety. Plants of Show Pelargoniums for exhibition early in June we should select now out of what nurserymen term half specimens, which are usually two years old.

Cyclamen persicum Varieties Raising (*W. R. N.*).—We do not see why you should not add the Cyclamen to your greenhouse plants. It will thrive admirably in such a structure as you describe, and we have no doubt that by following the instructions given in this Journal by Mr. Edgerton, page 24 of the number for January 12th, you will flower them within twelve months. You best place for raising the seedlings will be the Cucumber frame, which you start early in March, and by continuing them in bottom heat you may have them in flower this time twelvemonth. A packet of seed will cost from 1*s.* 6*d.* to 2*s.* 6*d.*, according to size. The largest will be sufficient to give you several dozen plants; we have had five dozen from a 2*s.* 6*d.* packet of seed. Any of the principal seedsmen could supply you with seed; we never depart from our rule not to recommend dealers.

Roses in Pots (*Idem*).—The soil in which you have potted your Roses is just what we use for Tea-scented, China, and Noisette Roses in pots—*i.e.*, the top inch or inch and half of a common where the soil is a light vegetable soil, half peat half loam, or something intermediate between the two, adding about one-third of rotten dung. Our Roses succeed well in it, and we have no doubt yours will, as the compost answers well for Geraniums. The soil you have used could not have been better. Roses in pots, and especially those on their own roots, do best in a light soil. Stiff clay soils no doubt suit the Briar, but are totally unsuitable for the kinds you name. We would not repot them again now, but give them a trial.

Lapageria rosea in a Pot (*T. W.*).—Pot it now, if not already done, and in what would be considered a large pot for other plants. Provide efficient drainage, and use a compost of fibrous brown peat torn in pieces but not sifted, adding silver sand liberally. Pot so that the setting-on of the roots may be just covered with soil. Give an abundant supply of water, and afford it a light, airy position in the greenhouse; all the better if shielded from the bright midday sun without resorting to artificial shade. Train the shoots to a flat or table-like trellis. When it is growing it will require water every day. The soil must always be kept moist. When growing freely it cannot have too much water.

Celery Culture (*A. B.*).—To cultivate Celery successfully you must sow the seed early in March in pans of rich light soil, just covering it with fine soil. Place the pans in a gentle hotbed or house with a temperature of from 50° to 60°. When the plants appear keep them near the glass, so as to prevent drawing, and when they have made the second rough leaf prick off about 2 or 3 inches apart on a slight hotbed, covering the bed with about 3 or 4 inches of fine rich soil. Protect with a frame and light if practicable; if not, use mats supported by hoops stretched across the bed. The mats may be removed in mild weather, but should remain over the plants for some time after pricking out, so as to screen them from powerful sun, and at night, if frosty, the mats should be placed over the plants. If in a frame the plants will need shade from bright sun until established. Admit air abundantly whenever the weather is mild. Harden well off before planting out, and attend to watering. At the end of May or early in June they should be planted out. Make trenches 15 or 18 inches wide, 4 feet apart, and 15 inches deep, and place in each not less than 3 inches, and better 6 inches, of well-rotted manure. Dig in the manure at the bottom of the trenches, and then fork well over prior to planting, breaking the clods and mixing the manure thoroughly. Plant about 9 inches apart, removing the plants with a good ball, and water well at planting, and afterwards two or three times a-week if the weather be dry. When the plants are growing freely copious waterings of liquid manure may be given twice a-week with advantage. In earthing-up, carefully close the stalks, so as to keep out the soil. If you wish for an early crop, sow in February and grow the plants in heat; they will be fit to plant in the trenches in May. For a late crop sow at the beginning of April, pricking out in the open air as described for those sown in March, and plant out in July. We grow Sandringham White and Ivery's Nonsuch, and about four other sorts, but the two named we like best. The "Garden Manual" contains full instructions for Celery culture. It may be had post free from our office for twenty stamps.

Cyclamen Atkinsi Seed Sowing (*W. S.*).—Sow the seed now, or not later than March, place it in a gentle hotbed, pot off the seedlings singly when large enough to handle, return them to the hotbed, continue to grow them in gentle heat, and in autumn remove them to the greenhouse. The treatment does not differ essentially from that of C. persicum, and as you have been successful in flowering it in ten months from the seed, we have no doubt you will also succeed with C. Atkinsi. The seed you have had could not have been good. Try again. We usually sow ours in autumn as soon as ripe, and place the pan on a shelf in the greenhouse, for though the forcing of these plants is all the rage just now, we do not think it necessary for successful treatment. It remains to be seen what will be the result of the forcing treatment on the plants in a few years. Ours have no bottom heat in any of their stages, at least not after the first year, for we do not think plants nearly hardy (some of them quite so) in any way improved by a temperature greater than they naturally require.

Orchids for Cool Conservatory (*Beechwood*).—We have no doubt the following Orchids would thrive well in the temperature you name, 40° to 50°; but then the house must not be treated as an ordinary greenhouse. Such plants as Fuchsias, Geraniums, and others like to have the side lights open, so that the air may blow through them, but this does not suit Orchidaceous plants, for although they have plenty of wind and full exposure to air in their native habitats, yet it must be remembered that wind with us, and also our entire atmosphere, usually tend to dry up moisture, but in the Orchid regions the atmosphere is heavily charged with moisture. In a temperature of from 40° to 50°, the following Orchids may be grown if the air be kept charged with moisture, and not so much air admitted as is usual for ordinary greenhouse plants:—Ada aurantiaca, Anguloa Clowesii, Arpophyllum giganteum, Cattleya citrina, C. maxima, C. Trianæi; Cymbidium pendulum, Cypripedium insigne, C. caricinum, C. Schlimii, C. vennstum; Cœlogyne cristata; C. corrugata; Dendrobium Hillii, D. nobile, D. moniliforme, D. speciosum, D. linguæforme; Epidendrum ibaguense, E. vitellinum; Barkeria Skinneri, B. spectabilis; Lælia albida, L. autumnalis, L. majalis; Lycaste Skinneri, Mesospinidium sanguineum, Odontoglossum Alexandræ; O. Bluntii, O. luteo-purpureum, O. grande; Oncidium nurosum, O. bifolium, O. nubigenum, O. Phalænopsis; Phajus grandifolius; Pleione maculata, P. lagenaria, P. Wallichii; Sophronitis grandiflora, and Zygopetalum Mackayi.

Pine Apples with Large Crowns (*Pine*).—It is chiefly attributable to weak growth, and in your case probably arising from the plants being too far from the glass; they cannot be too close to it if the leaves do not touch it. The plants are grown too close together; give them more room, all the light possible, and plenty of air. With good, stiff, sturdy plants you will obtain a greater weight of fruit from a given space than you will from one-third more plants in the same space. Another cause of large crowns is the plants being old, for these generally have a large leaf development, and afford comparatively small fruit.

Vinery Planting (*Ten-years Subscriber*).—We regret you have arranged to plant the Vines outside. Could you not alter this and plant them inside? It might easily have been effected by having the front wall pillared, which we think it must already be, as the border is inside as well as outside. Plant inside by all means, if you can, and if you cannot, we do not see the utility of your inside border. The bottom being a sandy rubble there is no necessity to concrete. We apprehend you do not wish for sorts that require a high temperature, but such as succeed well with Hamburghs, which you mention. In addition to the three Hamburghs you will have room for ten Vines. We should plant them 8 feet apart, the end Vines 18 inches from the ends. We should plant two Black Hamburgh, two Frankenthal, two Trentham Black, one Black Prince, one Buckland Sweetwater, two Foster's White Seedling, one Trovêren Frontignan, one Golden Champion, and one Generaldelia Marmora. We have omitted the Muscats and late Grapes, which require more heat than the preceding, and are best grown by themselves; indeed, they cannot well be grown in a miscellaneous collection. We would not plant any fruiting Vines, but would have those known as strong planting canes, nor would we introduce any Peaches or Apricots in pots, as they will not do well more than three years. No doubt they would do well this and the following year, if you obtain trees in a bearing state. They will, of course, require to be in pots.

Paying with Fuel, &c. (*H. A. D.*).—In this matter we have no experience. We consider it to be a bad plan to pay in milk, Potatoes, peat fuel, &c. Six inches of thatch would do for the sod-covered ice house.

Orchard House Fruit Trees (*C. T.*).—With Peaches on the back wall, we think that one cane would have been enough for each Vine. We should be disposed to leave two in those cases where they were extra strong and the contiguous Vines weak, until they gathered strength. Even the strongest of the Vines we should never think of leaving the length of the rafter. By doing so, if the wood is well ripened, you may have a lot of fruit this year, but your Vines will do little good afterwards. A few of the strongest we would leave half their length, the others one-third, and the weakest less. A little sacrifice now with young Vines will be gain in the end. A shady pit will not do for early Vines where the heat is deficient. If the damp is too much, you must cover the hot-water tank more securely. Under the circumstances the beginning of February would be early enough.

Cucumber House (*T. M.*)—In reference to the Cucumber house alluded to at page 55, the further information is given that the house is span-roofed, that there is to be a bed on each side, that the house is to be heated by a flue, and the chief questions are, How is top and bottom heat to be obtained, and whether earthenware tiles or bricks would be best for use? First, then, earthenware tiles would be of no use for such a purpose. You will require a good strong flue of bricks all round. For such a narrow house, 8 feet wide, we would have been satisfied with a bed in front, and the flue going through that would have given bottom heat to the bed, whilst the back flue would be for top heat. For such a purpose we would make the first 6 feet of the flue from the furnace brick-on-bed, and the rest all round brick-on-edge. A flue 9 inches wide inside and 14 inches deep would be required, to be covered with strong tiles, with the tiles beneath to cross the joints. Then there are various modes you might adopt. First, Take a 4½-inch brick wall all round inside, or at least on both sides, as the boundary of the beds inside, make an open bottom of slates, &c., 4 inches above the flue, and have openings in the wall to put water into evaporating-pans on the flue. These openings with slides will enable you to let the air, heated or moist, into the atmosphere of the house. Another plan is simpler still. Make the inside next the pathway-side of your flue 4½-inch work, or brick-on-bed all round, when you cover the flue raise these walls at the side to the necessary height, between the flue and the outside walls fill in as

hollow as possible with clinkers and brickbats, put one layer over the flue likewise, and finish all across with fine-washed pebbly gravel, so as to make the bottom for your earth bed. Before finishing the open rubble, fix upright at every 3 or 4 feet a drain-tile of 3 inches in diameter, to be supplied with a plug above the soil's level; when you pour water down among the rubble it will rise again in vapour as you work, and you will remark, by so doing, the water will never come directly on the flue. By this means you can have top heat moist or dry. The inside of the flue will be for top heat, and the top and the sides next the outside walls for bottom heat. There can be no plan simpler and more economical under the circumstances.

Flower Garden Plan (*M. X., Cheshire*).—We think your proposed border would look better if the Cerastium were continued on both sides, though of unequal widths, interrupted now by the angles of the diamonds. This would reduce the latter, but that would be an improvement, as making all more uniform in size. Making the connecting lines of 2 (Lobelia) wider, would on the same principle be an improvement. The Aurea floribunda Calceolaria, if young dwarf plants, will do very well. Of the Nasturtium and Petunia in diamonds we are more doubtful, as the one will need so much picking, and the other so much pegging. By lessening the diamonds and the Cerastium, and widening the Lobelia, then having the diamonds of yellow and dwarf scarlet Geraniums would look well.

Hares Barking Fruit Trees (*Lady Waterford*).—Though the bark of your fruit trees has been damaged by hares, in all probability the vital portion or inner bark has not been so destroyed, but if properly protected at once, it will be able to perform its functions in the next season. For this purpose let all the wounds be covered as soon as possible with the mastic L'Homme Lefort, or any sort of grafting-wax. The plaster made of cow dung and clay applied to the wound and bound round with old sacking, will answer very well in the absence of the mastic. The best preventive we know against these ravages of hares and rabbits, is to dip strips of brown paper in gas tar, and when dry to bind them round the trees.

Parentage of Auriculas (*G. S.*).—"I believe it to be generally acknowledged, that the parent of both the Alpine and florists' Auriculas is the Primula Auricula. As to the two kinds not crossing, so far is that from being the case, that many Auricula growers will not allow any Alpine near their florists' varieties for fear of deteriorating the seed, the Alpine being more vigorous and exercising a very marked influence on the seed vessels.—D., *Deal*."

Begonia fuchsioides with Small Flowers (*A Lady in Cheshire*).—The smallness of the flowers is owing to the growth being weak. The only way to remedy the defect is to grow the plants in a more airy lighter structure, so as to secure strong, short-jointed, firm shoots, and then we have no doubt the flowers will be larger, for as the wood is so are the flowers. They would do better in a vinery in summer than in a close stove, which is apt to cause weak shoots. Cut away the weak old growths and encourage fresh shoots from the base. Ours are now sending up several strong young shoots, and in about a month they will be in a vinery at a temperature of 50° to 55° at night. When the plants are flowering, or rather when they begin to show flower, they are benefited by the application of weak liquid manure two or three times a-week.

Oleander Bare at Bottom (*Idem*).—There is no remedy but to cut it down to within 6 inches of the pot, and we should do this early in March, keeping the plant rather dry, and then to encourage it to break freely we would place it in a vinery or other house with a moist gentle heat. You may make cuttings of the upper parts. The points of the shoots, cut off from 4 to 6 inches long, strike freely in sandy soil on a hotbed. The old plant will not flower this year, but should have every encouragement, being potted when it has made shoots a few inches long. If you have room we would not cut the plant down, but keep it as a standard; nothing can be finer than a standard with a good head on a 6-feet stem. Ours are bushy plants about 6 feet high, with from six to a dozen shoots starting from near the soil. If you keep the standard, strike cuttings early in summer, and grow the plants as dwarfs, by stopping them when 6 inches high to induce side shoots, which should be again stopped; you will thus have plants feathered from the pot, but they will not be in a blooming state for three years.

Shrubby Calceolarias Raising (*J. D.*).—Between the present time and March you may sow the seed in pans well drained, and filled with a compost of light turfy loam two parts, and one part leaf mould, with a sixth of silver sand. Mix the soil well, and sift it fine, make the surface smooth, scatter the seeds evenly over the surface, and sprinkle with silver sand lightly. Place the pans in a hotbed, keep the soil moist, and when the plants are large enough to handle prick them off singly about an inch apart in pots or pans. Continue the plants in the hotbed, and when they meet pot them off singly in 3-inch pots; at the end of May remove them to a cold frame, gradually harden them off, and finally plant out in June, or when they are bushy plants. They may flower in autumn, but will be of no use for flower garden purposes. Could you not now procure cuttings of some neighbour? They would strike freely in gentle heat, and be good plants by bedding-out time. It is as much as the seedlings will do to make plants fit for planting out by autumn, and unless you get seed of a good strain it is not worth the trouble of sowing.

Varieties of Grape (——).—You will see by our columns that attention is being drawn to this subject, and we have no doubt that Grape-growers will favour us with their experience; but we do not see what greater information would be secured than we possess already in Dr. Hogg's "Fruit Manual." Neither of the authorities you name grows for fruiting more than half the Grapes described in Messrs. Rivers's catalogue, to which we think you refer, in dividing Grapes into three classes —viz., Muscats, Frontignans, and those not Muscat nor Frontignan. There is no best black or white Muscat suitable for early forcing. As to Frontignans, the White is excellent for early forcing, but is superseded by the Trovéren, and of the Red none is equal to the Red or Grizzly Frontignan for early forcing, though Purple Constantia is good. Frontignans are better suited for early forcing than Muscats, which cannot be well ripened before June or July, but the others may be ripened in May or earlier. Of Grapes neither Muscat nor Frontignan, there is none so good as the Black Hamburgh. Black Champion is good, but not equal to Frankenthal or the old Hamburgh, though in an early vinery we should plant it for its earliness along with both the others. It is very doubtful whether the Early Black Berdeaux will retain its early-ripening properties. Royal Ascot is excellent for early forcing, especially for pot culture. We should include it in an early vinery, for we agree with you that it is well to plant more than one kind, so as to have a succession. Mill Hill Hamburgh, in our opinion the best of all the Hamburghs, requires a higher temperature than the Black Hamburgh and Frankenthal, and ripens a fortnight later. Of the white kinds not Muscats nor Frontignans, Foster's White Seedling must supplant the Royal Muscadine, and of other white kinds Buckland Sweetwater is the best, for though there are some that ripen earlier, as Early White Malvasia, they are so small in berry that it is worth while to wait a few days. With us the White Frontignan is a fortnight earlier than Buckland Sweetwater in the same house. Of grafting kinds for early forcing we have but little experience, but we have no doubt it tends to cause earlier ripening, for grafting has a tendency to produce that result irrespective of stock, as you will find if you have a Hamburgh grafted on a Hamburgh stock, and another growing on its own roots, the grafted ripening earlier than the non-grafted. For accelerating the ripening, were we to graft at all, we should try Duc de Magenta, a vigorous grower, ripening several days earlier than the Hamburgh.

Theophrasta imperialis Cutting Down and Propagation (*E. C.*).—As you have not room for the plant, there will be no alternative but to cut it down, unless you dispose of it for smaller plants. The best time to cut it down will be the middle of February; afterwards keep it rather dry at the root, but encourage it to break by a brisk heat and moisture. The young ripe shoots may be made into cuttings, which should be inserted singly in small pots filled with sandy peat, surrounding the cutting with silver sand. Plunge the pots in a hotbed, keep moist, and cover the cuttings with a bell-glass or hand-glass, keeping them close and shaded from bright sun. The cuttings may be from 3 to 6 inches in length. Trim off the leaves of the part inserted, and cut transversely below a joint. The cutting will be rooted in about six weeks.

Inarching Vines (*Subscriber*).—The best time to do this is after the stock has made shoots a few inches long. There are then leaves to appropriate the sap, and with them there is nothing to fear from bleeding. The operation should be performed near the bottom of the rafter, choosing a smooth part of the stock there, or as near its base as possible. Take from the stock a slice of bark and wood about 1½ inch long, and an equal portion from the scion, and in such a manner that the cuts fit exactly; then make a downward cut in the stock about three-quarters of an inch long and half an inch deep, and a corresponding cut upwards in the scion, and about half or three-parts through. Introduce the cut or tongue of the scion into that of the stock, and so unite them that the bark of both may fit exactly, if not on both, at least on one of the sides. Bind firmly with a ligature of cotton or bast matting, and cover with grafting wax so as to exclude air. A little clay will answer, but to keep it from cracking it should be covered with a little moss lightly secured with matting. You may inarch on the wood of last year, or that of several years' growth, or you may operate on the present year's wood after it has become rather firm, yet quite green or unripe. In about six weeks the union will be complete, then cut away the part of the stock above the scion, and detach the scion from its parent, but make sure that the union is complete. The ligature will need to be loosened when the union is effected; you will notice this from the increased growth of the scion Replace it, but loosely.

Evergreen Hedge for Garden (*C. N. B.*).—The quickest-growing and cheapest is evergreen Privet. If for a boundary fence, Privet will not be formidable enough; in that case plant two evergreen Privets, and four Thorns or Quicks per yard Berberis Darwinii and Thorn make a beautiful hedge—two plants of the Berberis and four of Thorn per yard.

Select Amaryllis—Eucharis amazonica Culture (*A Lover of Flowers*).—Meteor, Rosalind, Jupitar, Reticulata, Victoria, and Amazon have crimson, white and red, scarlet, and white and crimson-striped flowers, and are very beautiful. They require stove treatment, and if obtained now they should be plunged in a gentle hotbed, or failing that be placed in the warmest part of the house, and they will flower in May. After flowering encourage a good leaf growth by an abundant supply of water and moisture, and when it is made afford water only to keep the leaves from flagging, giving the plants a light position. From September to February they may be kept on a shelf in the stove. Eucharis amazonica, we presume you now keep dry, giving but little water. When it begins to grow water freely, and afford plenty of moisture. When good growth has been made, or after July, keep it but moderately supplied with water, and place it in a light airy position in the greenhouse, and in September remove it to a light position in the stove. If it do not throw up flowers keep it dry over the winter, and it will throw up its spikes in spring or early in summer. The main point to be attended to is to secure a good growth, then ripen it well by exposure to light and air. Afford it a season of rest, and when it is introduced to heat the flower-spikes will be thrown up.

Growing Onions (*A Lover of our Journal*).—There may be different means of attaining results, and in growing Onions there are the plan adopted by your gardener and that which you describe. Good Onions are grown both ways. One is as good as the other. We prefer sowing them in beds 4 feet wide, with 1-foot alleys between, sowing in drills about 6 inches apart. The alleys afford ready access to the beds for weeding and thinning, without in wet weather treading on the beds. The main points, however, are to have ground well dug and manured in autumn, to turn the ground over in dry weather, in spring to dress with lime and soot, or charcoal, to keep off grubs (lightly pointing-in these materials), to tread the ground firm, and to sow as early in March as the ground is in good working order. Keep the plants clear of weeds, and then thin out before they become crowded. Those mattere attended to, it is little consequence whether Onions are sown in beds, or in drills continuously without alleys.

Holly Hedge Neglected (*T. H.*).—Unless you can bring some of the smaller branches down, or lay them into the thin parts, you have but a small chance of making a 12 to 14-feet Holly hedge of any use against cattle. We would, however, lay-in as many of the small branches as possible, and then take off the top to 4 feet. We would leave a few of the Thorns and Hollies having the best heads. They are very ornamental, and if not more frequent than 20 yards apart, would not interfere with the growth of the hedge. The best time to cut the hedge down would be at the end of March.

Disa grandiflora Vigorous (*Amateur*).—We have no doubt that your very vigorous plant will reward you next summer with flowers. We

should say it is in a good state of health. The difficulty is to keep it long healthy, especially after it flowers.

Asphalte Walks (*A Lady*).—There is no objection to asphalte garden walks except their colour, if they are quite hard in warm weather. The Company you inquire about is the Val de Travers Asphalte Company, Leadenhall Street, London, E.C.

Box Hedge Straggling (*M. G.*).—Your only plan will be to cut it well in this spring, clipping with the shears, which may be done to any extent but as you do not wish for greater height, we would confine the cutting to the sides, merely removing any straggling growths at the top, so as to promote uniformity of growth. It is well not to prune or clip too early. From the middle of April to the end of May is a good time, but the work may safely be done after the Box begins growth.

Raising Herbaceous Plants from Seed (*Idem*).—As you wish for plants for sale, it will be necessary to grow the most popular kinds. They may be sown in May in the open ground, in rich light soil, watering in dry weather, and when large enough to handle prick them off about 3 inches apart:—Alyssum saxatile compactum, Anemone coronaria varieties, Antirrhinum varieties, Aquilegia vulgaris varieties, A. vulgaris caryophylloides varieties, Arabis alpina, Auriculas, Double Daisy, Canterbury Bells, Delphinium formosum, Double Feverfew, Gentiana acaulis, Geum coccineum, Pansies (for spring flowering sow in July), Hollyhocks, Musk, Myosotis sylvatica, blue, rose, and white; Pentstemons, Phlox decussata, Pinks, Carnations, Picotees, Polyanthuses, Rockets, Brompton and Intermediate Stocks (sow the middle of July), Sweet Williams and Wallflowers. Red lead will not injure vegetable seeds, and it effectually protects them from birds, mice, and rats. The last did us great mischief in the past year, until we coated the seeds with red lead before sowing.

Names of Fruits (*Rev. C. Badham*).—1, Reinette Blanche d'Espagne; 2, Northern Spy; 3, Foulden Pearmain.

POULTRY, BEE, AND PIGEON CHRONICLE.

RESULTS OF POULTRY-KEEPING.

It is often said that comparisons are odious, and to those who cannot bear to take the inferior place they certainly are so, but I should be glad if any of your readers would favour me with their experiences on the following statement, as I might then either learn in what way others have been more successful, or be the means of affording information to them.

Eggs set	116
Chickens hatched	93, or 63 per cent.
Chickens reared	59, or 41 per cent.

Of these thirty-five were cocks and twenty-four hens.—W. H.

ABERDEEN POULTRY AND PIGEON SHOW.

(*From a Correspondent.*)

This again maintained its position as one of the leading exhibitions in the northern part of the kingdom. The entries were more numerous than on any previous occasion, and the quality of the stock exhibited has rarely been equalled. Of the arrangements I can only say that they were well matured by an efficient committee, and faithfully carried out by an active secretary and assistants.

Game.—The class for single cocks was represented by twenty-five birds of rare excellence, many of them having gained first prizes at other shows, and all being fit to win. The single hen class was nearly as good. The cockerels and pullets were by far the best, although some of the unnoticed pens should have been in the prize list. Many good judges thought pen No. 105 should have carried off the cup.

Spanish were scarcely so good as they had been in former years, although many good pens were exhibited. The winning pens were all good, and that which gained the cup changed hands shortly after the Show opened.

Dorkings, as usual, formed the principal classes at this Show; rarely indeed has such a collection been brought together. The Silver-Grey were in many cases heavier than the Coloured, indeed Aberdeen Shows surpass in Silver-Grey Dorkings. Some disappointment was caused with the awards in this class; many of the unnoticed pens should have been in the prize list, our oldest and most experienced breeders being left out in the cold. I was particularly struck with pens 106 and 115 in the cockerel and pullet class being passed over without even a notice. In Coloured Dorkings the Judge was more at home, and seemed to prefer them, having given the cup for the best pen of Dorkings to the first-prize cockerel and pullet.

Cochin-Chinas seem to be falling back in the north; the birds exhibited this year were far behind the specimens we were accustomed to look upon at the former shows of this Club. The prize pens were well placed. Some would have preferred the third-prize cock in the place of the first, and I think they should have changed places.

Brahma Pootras were a large and good class, many of the birds reminding me of the specimens exhibited in the days when Mr. Boyle was so successful. I was not satisfied with the awards in this class, the Judge evidently preferring rough and large birds to those of better shape and marking. The cup hens well deserved their place, and were the best pair of hens exhibited in Aberdeen since Mr. Boyle competed some six years ago.

Houdans were a fair class, and seem to make way a little. I cannot say but I would have awarded the prizes differently. Pen No. 200 ought surely to have been in the prize list. Perhaps the Judge thinks the light-coloured variety inferior to the dark.

Hamburghs are falling back in the north. With the exception of the prize pens nothing deserves especial mention; the Golden-pencilled were the best, and the cup hens the best in their class.

Bantams.—Game mustered more strongly than ever, no less than thirty Bantam cocks competing for the prizes; the Judge must have had much difficulty in deciding where all were so good. The cup in this class was carried off by a remarkable bird. In the class for Any variety of Bantams, with the exception of the winning pens there was nothing calling for special notice.

Ducks, both Aylesbury and Rouen, were well represented, although I have seen better specimens at former shows. I think the Committee should offer a cup at their next show, which would doubtless bring a better competition.

Turkeys and *Geese* were well represented; although not numerous there were some rare specimens exhibited.

The Selling Class comprised many fine birds, which, on the opening of the Show, were speedily claimed.

PIGEONS.

The Pigeon section formed the best and most attractive portion of the Show, such a collection never having been seen so far north, there being 250 entries. It is to be regretted that the birds of Mr. Horner, of Harewood, arrived too late for judging, from being detained on the railway. They comprised some of the best birds exhibited, and would have been sure to have been in the prize list.

Pouters were exhibited in five classes for cocks and five for hens. The Blues and Blacks were perfection, being all birds which had previously carried off honours at the Crystal Palace and Edinburgh Shows. The cup for the best Ponter was won by Mr. Ure's grand black cock. The class for Reds or Yellows was one of the largest, and contained many fine birds. I think this class was the worst judged in the Show, the best Red cock I have seen this season being placed only third; he certainly ought to have been first, being good in shape and form, and rich in colour. In Whites the best cock in the Show was placed third, and should have changed places with the first. Hens were better judged. The Any-coloured class contained a mongrel-looking set, but birds useful for stock purposes. *Carriers* were not a large show, but some fine specimens particularly noteworthy were exhibited. *Short-faced Tumblers* were a poor class. The fancy for Tumblers does not seem to prosper in the north. *Barbs* were a large and excellent class, the winning pens being birds of great merit, and they will doubtless be heard of again. *Fantails*, which at this Show form always one of the largest classes, were better than usual, the winning pens being almost perfection. I regretted to notice one exhibitor showing two hens (pen 487), which had to be separated during the Show. *Jacobins* were one of the largest classes and contained many fine specimens; here again Mr. Horner's birds were the best, but, being late, could not take their proper place. *Trumpeters* were a good class, the best pens in the kingdom competing. I think the prizes were justly placed. *Turbits* call for no special notice, the winning pens being small and handsome birds. *Owls* formed a large class, and there were some very fine specimens. I think the Whites belonging to Mr. Goddard, of Earlston, should have been first and have carried off the timepiece; they were the most admired in the Show. *Nuns* were a good class, many of them being shown without dressing. Had Mr. Symon done a little tailoring to his third-prize pair he would have doubtless taken a higher place. *Dragoons* were a large and meritorious class, the winning birds at Birmingham and the Crystal Palace competing for the place of honour. *Antwerps* formed a large and attractive class. The Judge did not seem quite at home here; many would have preferred some of the unnoticed pens to the winning birds. Pen 557, passed over without a notice, being out of sight, was the best in the class. The *Variety* class was large, and many rare and valuable specimens were exhibited, the winning pen (Laced Fantails), and which also carried off the timepiece, attracting much attention. The second-prize pen, a pair of Damascenes imported from Constantinople, was also much admired. The *Selling* class consisted of twenty-five entries, and birds worth twice the price at which they were entered speedily found buyers.

The Show was well patronised during the two days it remained open, and I was glad to observe a larger number than usual of the pens ticketed "Sold." The names of the Judges and the list of awards were given last week.

Silver Cups at the Crystal Palace Canary Show.—The Lizard and London Fancy cups are already subscribed for, and I should like all intending subscribers to send at once, as the time is now so very short. Cinnamons, I am afraid, this year will be left out in the cold; nobody will give to this class. I hope to send the cups to the Palace on Thursday the 9th inst.—Howarth Ashton, *Polefield Hall, Manchester*.

The Light Brahma Cup at Portsmouth.—I have much pleasure in announcing that since my last letter appeared in your columns I have received some additional subscriptions towards the cup for Light Brahmas, and that the amount promised or paid has reached six guineas; the prize will therefore be a valuable one, and I can only express a hope that the competition will be close, and that the best pen may win. The following ladies and gentlemen have been contributors—Mrs. Williamson, Mrs. Turner Turner, Miss Hales; Messrs.

Crowley, Crook, Leno, Long, Maynard, Pares, Rodbard, Rid'ey and Storer. The contributions have varied from 5*s.* to 10*s.* 6*d.*, and I may add that I have received scarcely any refusals so far in the subscription.—JOHN PARES, *Postford, Guildford.*

LOWESTOFT POULTRY SHOW.

THE Lowestoft Poultry Society held their fourth Show in the Town Hall, on the 25th and 26th ult. The entries had increased so much that the Committee had to purchase a quantity of new pens, even though they refused a number of entries that arrived late. Many of the birds that had already carried off honours put in an appearance, and added another cup to the honours already obtained by their fortunate owners. The birds were well cared for; some of the Committee were always in the room giving their personal attention to the feeding, &c., of the birds. Extra prizes were awarded in all classes where the entries were large, showing the desire of the Committee to gratify the exhibitors as much as possible. The entries had more than doubled since the last Show held in the Town Hall, consequently the space for visitors was very much curtailed.

In the *Game* class the cup went to a grand pen of Brown Reds, although the Duckwings belonging to the same exhibitor were worthy of equal honour. In this class a roupy cock was sent, but the Committee returned it to the owner. There were several other pens worthy of a prize. The cup pen of *Dorkings* was a good, balanced pen, the hen a very square bird, the cock quite equal, with good feet. Mr. James's well-known pen carried off the *Spanish* cup. Had it not been for the careful attention given by the Committee to the cock bird, feeding him with bread and milk, egg, &c., he would not have held up to the end of the Show. Pen 30 consisted of very good birds, the cock's comb rather falling. The hen in the cup *Cochin* pen was decidedly the finest hen in the class, but I would prefer the cock in pen 39, a bird I should like to have seen in the prize list. In the Brahma class I thought the second-prize hen better than the cup bird, but the birds were not so well matched. Pen 57 contained a good cock, but the hen was not equally good. There was a good show of *Hamburghs*. The cup went to a pen of Silver-spangles, the hen one of the best I have seen for some time, and the cock with a beautiful clear tail. The second-prize birds were good, the cock rather faulty in hackle. There was a sharp competition in the class for Golden-pencilled. Pen 65, unnoticed, ought certainly to have had the first prize in preference to the cock with odd sickles. Several other pens were worthy of a better place than they obtained. The Silver-pencilled were a poor class; nothing worth notice, saving the first-prize pen. The Golden-spangled were well shown and fairly placed in the prize list. The second-prize pen contained by far the best hen in the class. In the Variety class La Flèche were first, Silver Polands second, Black Hamburgh third. The Selling class numbered seventy-one pens. Spanish and White Cochins took the first prizes, Brown Red Game and Spanish the second, Cochins and Silver-spangled Hamburghs the third. The two classes of *Bantams* numbered sixty pens. The cup went to a beautiful pen of Gold-laced; the prizes in the Game class went to Duckwings and Black Reds. There were some fine pens of *Ducks*, both Aylesbury and Rouen, and an extra prize was given to a very beautiful pen of Mandarins.

There was a good show of *Pigeons*, the Carriers, numbering forty-one pens, were a show in themselves. Pen 265, highly commended, was decidedly the best bird in the cock class, and was worthy of the first prize. The first and second-prize birds were very good in eye, but rather short in neck. Many of the other pens were filled by very fine birds. Pen 269 contained a long-necked bird of good carriage, but too young to compete with the winners. The hens were well judged. The first prize went to a grand hen with a perfect eye, the second had a very good eye, but was too short in the neck; the extra-prize pen was better in carriage, but not so good in eye. Pen 280 contained a hen with a beautiful head, with cere too red. Although four prizes were given in the Young Bird class, yet there were several other pens that were worthy of prizes. The first prize was well adjudged, going to a grand young cock; the second was a mistake, pen 293, a good hen, ought to have had it; not another bird in the class, except the first-prize bird, could touch her either in eyes or neck. The others were fairly judged. The Pouter entries were small, and, beyond the prize pens, there was nothing of particular note, and not a single Blue was shown. The Short-faced Tumblers were all good in beak and head, some of the pens not well matched. All the prizes went to Almonds. In the Long-faced class a very nice pair of Black Balds took first, and Yellow Beards second. A very good pair of Short-faced Blues were entered in the wrong class. The first prize for old Barbs went to Black, with very good eyes and skulls; the second-prize cock was good, but like those in several of the other pens, the hen was not equal to the cock. Several very good pens of young Barbs were shown; both prizes went to Blacks; the second-prize pen was soon claimed. The winning Fantails carried their tails well. The cock in the second-prize pen was the best bird in the class. The first-prize Antwerps were good, the others only of average merit. The Variety class contained some beautiful birds. A fine pair of Black Trumpeters, with perfect rose, took the first prize. An extra first prize went to a pair of Yellow Dragoons, coarse in skull, and the hen had in colour on the thigh and rump. Blue Runts were second, and a very good pair of Magpies extra second. Many other pens were worthy of especial note. In the Selling class a pair of White Florentines were first. The question is sometimes put, What is there in a name? Anyone looking over the new varieties of Pigeons would be convinced there is a great deal in a name, for in some of the new specimens certainly there is nothing but the name to attract attention. Florentines are a striking instance; one would be inclined to class them as inferior Runts were it not for the exhibitor having the name properly entered in the catalogue. The point cup for Pigeons was awarded to Mr. P. H. Jones.

GAME (Any variety).—Cup and 2, S. Matthew, Stowmarket (Black Reds and Duckwings). Local, T. Sterry, Lowestoft (Black Red). *hc*, W. Boyes, Beverley; R. Hall, Cambridge (Black Red and Duckwing). *c*, Rev. C. Gilbert, Burlingham.

DORKINGS (Any variety).—Cup, L. Patton, Hillmore, Taunton. 2, F. Parlett, Great Baddow (Coloured). Local, (4. W. D. Palmer, Lowestoft. *c*, Mrs. E. Wheatley, Ingatestone; J. Frost, Parham (Coloured); Henry Lingwood, Barking, Needham Market.

SPANISH.—Cup, F. James, Peckham. 2, Howard & Nicholls, Peckham. Local, W. Saunders, Lowestoft. *hc*, W. Saunders; J. K. Fowler, Aylesbury.

COCHIN-CHINA (Any variety).—Cup, Henry Lingwood (Buff). 2, Horace Lingwood, Creeting (Partridge). Local, J. Ling, Lowestoft (Partridge). *hc*, Lady Gwydyr, Stoke Park, Ipswich; J. Dutton, Ipswich (Buff); T. Rogers, Walsall. *c*, J. Watts, King's Heath (Buff).

BRAHMA POOTRA (Any variety).—Cup, Lady Gwydyr. 2, W. Adams, Ipswich (Dark). Extra, Horace Lingwood (Dark). Local, A. Page, jun., Lowestoft (Dark). *hc*, J. K. Fowler. *c*, Rev. J. Richardson, Sandy (Dark); A. Page, jun. (Dark).

HAMBURGHS.—*Golden-pencilled.*—1 and 2, W. K. Tickner, Ipswich. Local, E. P. Youell. *c*, Rev. J. Richardson; R. R. Parker, Ipswich; J. K. Fowler. *Silver-pencilled.*—1, H. Pickles, jun., Earby. *Golden-spangled.*—1, H. Pickles, jun. 2 and Local, L. Wren, Lowestoft. *c*, Miss C. E. Palmer, Lighthorne, Warwick. *Silver-spangled.*—1 and Cup and Local, J. B. Bly, Lowestoft. 2, Rev. F. Tearle. *c*, H. Pickles, jun.; J. W. Ling, Lowestoft.

ANY OTHER VARIETY, EXCEPT BANTAMS.—1, W. Burrows, Diss (La Flèche). 2, H. Pickles, jun (Silver Polands). Extra, J. Watts (Black Hamburgh). Local, Rev. A. Gilbert (Crève Cœurs). *c*, W. K. Patrick, West Winch, Lynn (Polands) (2); Rev. C. Gilbert (Houdan); Rev. N. J. Ridley, Newbury (Malay); C. Maggs, Melksham (Black Hamburgh); J. K. Fowler (French).

SELLING CLASS.—*Cock or Cockerel.*—1, F. James (Spanish). 2, H. E. Martin, Sculthorpe (Brown Red Game). Extra, T. Rogers (Cochin-China). Local, Mrs. C. Denton, Lowestoft (Spanish). *hc*, Howard & Nicholls. *c*, G. P. Rouse, Fakenham (Game). *Hens or Pullets.*—1, S. Felgate, Ipswich (White Cochins). 2, Howard & Nicholls. Extra, Rev. F. Tearle, Gazeley Vicarage, Newmarket (Silver-spangled Hamburgh). Local, L. Wren (Golden-spangled Hamburgh). *hc*, Rev. T. C. Hose, Roydon Rectory (Buff Cochins); J. Dutton (Buff Cochins); H. Brown, Putney Heath (Spanish); R. R. Parker (Black Red Bantams). *c*, H. Pickles, jun. (Polands).

GAME BANTAMS (Any variety).—1, Rev. F. Cooper, Ampney Crucis (Duckwing). Extra 1, W. Adams (Black Red). 2, H. W. Wallace, Framlingham (Black Red). Extra 2 and *hc*, Hon. Mrs. Paget, Hoxne, Scole (Duckwing and Black Reds). Local, J. F. S. L. Barber, Lowestoft (Black Red).

BANTAMS (Any other variety).—1 and Cup, Rev. G. F. Hodson, North Petherton. 2, M. Leno, Markyate Street (Laced). Extra, C. Drake, Stoke, Ipswich (Black). Local, Miss M. Jodrell, Lowestoft (Japanese). *hc*, Rev. F. Tearle (White). *c*, J. Watts (Sebrights).

DUCKS.—*Aylesbury.*—1, Lady Gwydyr. 2, J. K. Fowler. Local, F. B. Potts, Kessingland, Lowestoft. *hc*, Lady Gwydyr. *Any other Variety.*—1, Mrs. E. Wheatley (Rouen). Extra 1, M. Leno (Carolina). 2, J. K. Fowler (Rouen). Local, Rev. A. Gilbert (Musk).

PIGEONS.

CARRIERS.—*Cock.*—1, W. H. Mitchell, Moseley, Birmingham. 2, H. Yardley, Birmingham. Extra, F. Smith, Selly Oak, Birmingham. Local, L. Wren. *hc*, E. Mayston, Diss (Dun); W. Massey, Spalding; F. W. Metcalf, Cambridge. *c*, P. H. Jones; F. W. Metcalf. *Hen.*—1, F. Smith. 2, F. W. Metcalf. Extra, W. Massey. Local, L. Wren. *hc*, P. H. Jones, Fulham; H. Yardley; F. W. Metcalf; W. H. Mitchell. (Any variety).—*Chickens.*—1, W. Massey. 2, W. H. Mitchell. Extra, F. Smith. Local, L. Wren. *hc*, W. Massey; F. W. Metcalf (2); L. Wren. *c*, J. Watts (Black).

POUTERS.—*Cocks.*—1, J. Walker, Newark. 2, W. Nottage, Northampton. *Hen.*—1, P. H. Jones. 2, W. Nottage.

TUMBLERS.—*Short-faced.*—1, J. Ford, Monkwell Street, London. 2, H. Yardley. *hc*, P. H. Jones (2); W. J. Woodhouse, West Winch, Lynn; J. Ford. *Any other Variety.*—1, W. J. Woodhouse (Baldheads). 2 and Local, Misses E. and A. Wren (Yellow Beards).

BARBS.—1, F. Smith. 2, P. H. Jones. Local, D. Bedford, Lowestoft. *hc*, H. Cawood, Thorne; H. Yardley; P. H. Jones. *c*, E. Mayston. *Chickens.*—1, P. H. Jones. 2, J. Watts. Local, D. Bedford. *hc*, W. Massey; W. Nottage; P. H. Jones. *c*, J. Holmes, Lower Sydenham.

FANTAILS.—1, H. Yardley. 2, A. A. Vander Meersch, Perry Hill. Local, F. S. Worthington, Lowestoft. *hc*, P. H. Jones; J. Walker.

ANTWERPS.—1, W. H. Mitchell. 2, J. Watts. Local, D. Bedford. *hc*, H. Yardley.

ANY OTHER VARIETY.—1 and 2, P. H. Jones (Trumpeters and Jacobins). Extra 1, H. Lyon, Ipswich (Yellow Dragoons). Extra 2, A. A. Vander Meersch. Local, A. W. Wren (Yellow Dragoons). *hc*, H. Yardley; P. H. Jones (Magpies); W. Bearpark, Ainderby Steeple; C. Norman, Ipswich (White Trumpeters). *c*, E. Mayston (Black Runts); Hon. Mrs. Paget (Starlings and Spots); H. Yardley; E. M. L. Cocksedge, Bury St. Edmunds (Archangels); W. Nottage (White Dragoons and Blue Owls); A. W. Wren, Lowestoft (Yellow Dragoons); J. Watts (Swallows).

SELLING CLASS.—1, P. H. Jones (Fantails). 2, H. Yardley. Local, A. W. Wren (Yellow Dragoons). *c*, E. Mayston (White Dragoons); P. H. Jones (Barbs); W. Nottage; A. W. Wren (Yellow Dragoons); J. F. Loversidge (Fantails); J. Ford (Carriers).

JUDGES: Rev. T. L. Fellowes, Honingham Rectory, Norwich, and Mr. W. B. Tegetmeier.

BARROW POULTRY SHOW.

THE following are the awards made at this Show, held on January 27th and 28th:—

GAME.—*Cock.*—Cup, W. Boyes, Beverley. 2 and 3, C. W. Brierley, Middleton, Manchester. *hc*, J. Frith, Chatsworth; J. H. Wilson, St. Bees. *Cockerel.*—Cup, J. Mason, Green Ayre, Lancaster. 2, J. H. Wilson. *hc*, W. Grice, Bootle. *c*, J. Wilson, Beckermont; J. Mashiter, Ulverston. *Pullets.*—1 and 2, C. W. Brierley. *hc*, W. Boulton, Dalton-in-Furness; W. R. Ormandy, Barrow; J. H. Wilson; J. Mashiter.

GAME.—*Black-breasted and other Reds.*—1, C. W. Brierley. 2, T. Mason. *hc*, J. Hodgson, Sheffield; W. Boyes; J. Frith; J. H. Wilson. *Duckwings and other Greys and Blues.*—1, W. Boyes (Duckwings). 2, J. H. Wilson. *hc*, J. Frith (Duckwings); J. Mashiter; R. Casson, Ulverston. *Any other Variety.*—1, C. W. Brierley. 2, J. Frith. *hc*, T. Mason (Pile). *Pullets.*—1, W. Boulton (Brown Red). 2, C. W. Brierley. *hc*, T. Mason.

GAME BANTAM.—*Cock.*—1, G. Hall, Kendal. 2, J. Mashiter. *hc*, J. R. Robinson, Sunderland; W. Grice; J. Hunt, Barrow.

SPANISH (Black).—1, C. W. Brierley. 2, H. Beldon. *hc*, Burch & Boulter, Sheffield; J. T. Hudson, Ulverston; J. Thresh, Bradford.
DORKINGS.—1, J. White, Warlaby, Northallerton (Grey). 2, S. H. Stott, Rochdale. *hc*, R. D. Holt, Orrest Head. *c*, R. D. Holt; H. Beldon.
COCUIN-CHINA—*Cinnamon and Buff.*—1, Mrs. Wilkin, Bootle. 2, J. Sichel, Timperley (Buff). *hc*, T. Stretch, Ormskirk; W. Burnell (Buff); J. Sichel (Buff). *Brown and Partridge.*—1, J. White, Whitby, Wakefield (Partridge). 2, E. Leech, Rochdale. *hc*, T. Stretch (Partridge). *White.*—1 and 2, J. Sichel. *hc*, J. Weeks, Bootle; E. Fearon (2). *c*, J. Cowman, Whitehaven.
BRAHMA POOTRA.—1, E. Leech. 2, J. Sichel. *hc*, H. Lacy, Hebden Bridge; J. Cowman; H. Butler, Bradford; W. G. Mulligan; H. Beldon.
HAMBURGHS.—*Golden-pencilled.*—1, H. Pickles, jun., Earby. 2, H. Beldon. *Silver-pencilled.*—1 and 2, H. Pickles. *hc*, H. Beldon. *c*, W. M. Mann, Kendal. *Golden-spangled.*—1, J. Ogden, Hollinwood. 2, H. Beldon. *hc*, J. Buckley, Taunton, Ashton-under-Lyne. *Silver-spangled.*—1, Ashton & Booth, Mottram. 2, A. Ainslie, Ulverston. *hc*, H. Beldon.
BANTAMS.—*Game.*—1, G. Hall. 2, J. W. Brockbank, Kirksanton. *hc*, J. R. Robinson; J. Sichel; G. Maplee, jun., Wavertree, Liverpool; J. Mashiter. *c*, J. Whitham, Barrow. *Any other Variety.*—1, M. Leno (Laced). 2, J. Sichel (Pekin). *hc*, H. Yardley; M. Leno (Laced); S. & R. Ashton, Mottram (Black); H. Beldon; H. Picklee, jun. (Black).
GEESE.—1, E. Leech. 2, S. H. Stott. *hc*, E. Leech; J. Hunt. *c*, R. B. Hudson; T. C. Hunter, Ulverston.
DUCKS.—*White Aylesbury.*—1, E. Leech. 2, S. H. Stott. *hc*, E. Fearon; J. Hunt. *Rouen.*—1, W. Gamon. 2, W. G. Mulligan. *hc*, A. Dickinson; G. Porter; J. White; S. H. Stott. *East Indian.*—1 and *hc*, S. Burn. 2, Rev. W. Sergeantson. *Any other Variety.*—1, S. Burn. 2, C. W. Brierley. *hc*, S. Burn; Rev. W. Sergeantson; M. Leno (Mandarin and Carolina); S. H. Stott (Carolina); W. Silvester (Carolina); H. B. Smith (Shieldrake and Carolinas).
ANY OTHER VARIETY.—1, H. Beldon. 2, J. Sichel (French). *hc*, W. G. Mulligan (Scotch-Greys); Rev. W. Sergeantson, Acton Burnell (Black Hamburghs); N. J. Ridley, Newbury (Malay); H. Pickles, jun. (Polands); W. Silvester, Sheffield (Polands); W. Gamon (Polish); Mrs. Wilkin (Houdans).
SELLING CLASS.—1 and 4, F. H. Green, Belfast (Brahmas). 2, H. Beldon, Golstock. 3, W. Boulton (Brown Red). *hc*, E. Wadham, Millwood, Dalton (Buff Cochins); E. Hall, Brimington, Chesterfield (Duckwings); J. Cowman (Brahma); W. Grice (Black Red Game); W. G. Mulligan, Springfield, Belfast (Spanish); M. Leno, Markyate Street (Light Brahma); W. Masland, Milverton (Cochin); C. W. Brierley; W. A. Burnell, Southwell, Notts; J. & J. Tyson, Barrow (Brown Red); T. Jackson, Birkenhead (Silver Polands); J. Mashiter (White Cochins); E. Fearon, Whitehaven; W. Gamen, Chester (Polish) (2). *c*, H. Andrewe (Brahma Pootra).

PIGEONS.

CARRIERS.—1 and 2, E. Horner, Harewood, Leeds. *hc*, H. Yardley, Birmingham; J. Smith, Ulverston; R. Lomas, Dalton; W. H. Mitchell; J. & W. Towerson, Egremont.
POUTERS.—1, E. Horner. 2, J. & W. Towerson. *hc*, J. Smith; J. & W. Towerson.
TUMBLERS (Any variety).—1, J. & W. Towerson. 2, W. Boulton. *hc*, H. Beldon.
JACOBINS.—1, J. W. Edge, Birmingham. 2, J. & W. Towerson. *hc*, E. Horner.
ANTWERPS.—1, T. Cock, Lancaster. 2, H. Yardley. *hc*, W. Arkwright; T. Cock; E. Horner; W. H. Mitchell, Moseley, Birmingham (2).
BARBS.—1, H. Yardley. 2, E. Horner. *hc*, E. Moreton, Hindpool, Barrow.
TURBITS.—1, H. Yardley. 2, E. Horner. *hc*, J. W. Edge.
OWLS.—1, H. Beldon. 2, J. Smith. *hc*, J. Canby, Hindpool, Barrow; J. Chadwick, Bolton; J. & W. Towerson.
FANTAILS.—1, E. Horner. 2, J. W. Edge. *hc*, J. F. Loversidge, Newark; H. Beldon.
DRAGOONS.—1, F. Graham, Birkenhead. 2, W. H. Mitchell. *hc*, G. Goore, Aigburth, Liverpool; J. Chadwick; E. Horner.
TRUMPETERS.—1, E. Horner. 2, J. & W. Towerson. *hc*, J. Smith (2); H. Beldon.
RUNTS.—1, J. Fisher, Barrow. 2 and *hc*, H. Yardley.
ANY OTHER VARIETY.—1, H. Beldon. 2, E. Horner. *hc*, H. Yardley; J. Smith (2).

CANARIES.

BELGIAN.—*Yellow.*—1 and *hc*, J. Hunt. 2, W. Jones. *c*, J. N. Harrison. *Buff.*—1, J. Hunt. 2, W. Crewdson. *hc*, J. Moffatt. *c*, J. N. Harrison.
MULE.—1, W. J. Stewart. 2, W. Bradley. *hc*, W. Arkwright. *c*, J. T. Mount.
PIEBALD.—*Yellow or Buff.*—1 and *c*, W. Jones. 2, W. J. Stewart (Buff). *hc*, J. N. Harrison.
LIZARD.—*Gold and Silver-spangled.*—1, J. W. Martindale. 2, W. J. Stewart (Gold-spangled). *hc*, J. N. Harrison. *c*, J. Bolton.
COMMON.—*Yellow.*—1 and *hc*, J. Hill. 2, W. J. Stewart. *c*, J. S. Mount. *Buff.*—1, 2, *hc*, and *c*, J. Hill.
GOLDFINCH.—1 and *hc*, J. N. Harrison. 2, W. Arkwright. *c*, A. Ainslie.

RABBITS.—1 and 2, W. Arkwright, Sutton Scarsdale (White Buck and Doe). *hc*, J. Boyle, jun., Blackburn (Himalayan Buck); J. A. Richardson, Lancaster. *c*, J. A. Richardson.

JUDGES.—*Poultry:* Mr. E. Hewitt, Birmingham. *Pigeons:* Mr. S. Handley, Pendleton. *Canaries:* Mr. A. Benson, Whitehaven.

COLCHESTER SHOW RABBIT PRIZES.

IN common with many others I was surprised to read Mr. M. Millington's letter in last week's number, in which he failed, as I am able to show, to prove that the prizes for Rabbits are wrongly arranged. In the first place, I am not afraid of contradiction if I say that the foreign varieties are at the present time more popular than the Lop-ears, as I can prove by the York Show itself. It is quite true that a sum of only £3 is given to Lops, and £9 to the six different varieties of fancy Rabbits, at Colchester, and even then Lops receive the greater share. I will analyse the prize list and entries of the York Show to prove that Mr. Millington cannot maintain that the Colchester prize-money is not fairly divided. In Classes 74 and 75 the value of prizes, including the cup, was £7 5*s.*; entries for both classes 23. Classes 76, 77, and 78 had prizes value £8 15*s.*, and only 22 entries. These five classes were for Lop-eared. Now, for the fancy variety classes; there were three classes—79, 80, and 81, and £3 15*s.* and a silver medal as prizes, and yet there were 45 entries. Thus the Lop-ears had more than four-fifths of the amount offered for the eight classes, but still only an equal number of entries. In the Selling Class there were more Lop-ears than any other breed, thus proving that they are at a discount if compared with the other kinds, because they are exhibited for sale.

I think the Colchester Committee has learnt a lesson by the York Show, and framed their schedule accordingly. Mr. Millington may think everything of Lops, and nothing of any other breed, but that is no reason why they should not be encouraged. Everyone admits the success of the York Show, but even its Committee will, no doubt, make a fresh distribution of prizes at any future show. I cannot, and I write impartially, see how the Colchester schedule is inferior to the Portsmouth one; however, time will prove. Mr. Millington's suggestion as to the formation of a co-operative Rabbit Club would entail too much trouble without affording any definite benefit to the Rabbit fancy.—D. P. GOODING, *Colchester.*

THE MANAGEMENT OF BEES DURING SNOW.

THERE is no time during the whole year that bees require more care than during winter. Although, comparatively speaking, it is a time of rest with the apiarian, his charges still must be looked after, their wants supplied, and means which ought to be prepared for every emergency during autumn applied for their preservation, as it is only by this care in winter that success in summer can be expected. As winter management has been so often described in these pages, it is not necessary to enter into details, and I will therefore confine myself to a few remarks on the preservation of bees during snow. Your correspondent "R. S." very wisely considers shading the best means yet devised; but even this plan is far from being entirely satisfactory, because shading will not reduce the temperature, which as a rule rises after snow, and causes the bees to seek an airing outside. When they do this, shade does more harm than good; it mars the bees when returning to their hive, and very many fall to rise no more. The only time when bees are in danger of losing themselves in snow is from the end of January to the end of March. The worst time that we have to contend with is at the termination of a long frost when deep snow has been lying, which commonly occurs from the end of January to the middle of February; and when the thaw comes in a calm with insufficient wind to lift the snow, the bees, roused by the sudden rise of temperature, make a rush, and thousands fall on the still cold snow to perish. It is recommended in the "Handy Book of Bees" to shut them in in time of snow; where this advice is taken it will prove sure destruction to the bees. Far better would it be to let them alone.

It is, moreover, recommended in the same book to tame vicious bees by placing a "scarecrow or potato bogle" in front of the hive. I cannot help remarking that this is far more like imagination than reality. The great Creator has made these our favourites much too perfect, and their senses, of which we have but a faint conception, far too acute, to be so deceived as to mistake a "potato bogle" for a man. Some people declare that it is not necessary to have any idea of the natural history of bees in order to manage them successfully. It is true that many keep and are very successful with bees who know very little about their habits and natural history; but apart from this, it is highly necessary, in the case of any animal whatever, to have a perfect knowledge of its natural history if we would cultivate it successfully. It is particularly desirable then during winter, and whilst snow is on the ground, to assist bees in accordance with their nature, and by so doing to preserve their lives, which is then the great aim—not by shading, as that is only a partial remedy, neither by shutting them in, which means suffocation and death, but by ventilation. Have your hives so made that, whenever snow appears at a time when the days are getting long, the doorway can be instantly closed, and the hive ventilated according to the number of its inmates to such an extent that, instead of the temperature of the hive being raised it shall in fact be reduced, thus keeping the bees quiet and preventing any attempt to get out until the weather is suitable. This is the only plan that I have ever found successful, and I could give an account of its success extending over a series of many years; but, as it is easy to try, I would rather let the experiment speak for itself.—A LANARKSHIRE BEE-KEEPER.

ROOFING FELT AND TAR.

I BEG to state, in answer to "A NORTHUMBERLAND BEE-KEEPER," that I have used both, and I did not see any harm result to the bees. The bee house once was coated when the weather was warm and the bees on the wing; at first they did not like the smell, and would hesitate a little, and then went in. I should recommend its being done in winter time, and not in warm weather, or else the bees would stick fast to the tar, or get their legs and wings smeared over from alighting on the painted part of the sides. The bee house I made holds three hives, with a passage out through the front. The roof, boarded and covered with felt, is sloping to the front, so as to give more room behind for manipulating; the back is closed

with a loose shutter without hinges, having two handles to lift it by, and is painted with gas tar.—J. R. F.

OUR LETTER BOX.

Books (*C. H. B.*).—We know of no work upon Game and Game Bantams exclusively. More relative information will be found by reference to the indexes of our back volumes than in any book hitherto published. (*A Constant Subscriber*).—Brent's "Canary." You can have it free by post if you enclose twenty postage stamps with your address.

Bristol and Clifton Show.—Highly commended, William Perrin, Bristol, should have been Nantwich.

Malay Prizes at Northampton.—"The Committee of the Northampton Poultry Show are deserving of the thanks of breeders and admirers of Malays, for considerately giving them a separate class in the prize list. I shall be happy to subscribe with others towards a cup or sweepstakes, as a special prize for the best Malay cock, hatched in 1870, but my time is too much occupied to admit of correspondence in its behalf. I shall hopefully look forward to the prize lists of the principal shows of this year, trusting to find separate classes at most of them, for Polands, Black Hamburghs, and Malays.—A. G. Brooke, *Shrawardine, Salop.*"

Pullets Eating the Cock's Feathers (*A Sufferer*).—Fowls, like many other bipeds, are apt scholars when the lesson is an evil one. One of the hens, being out of condition, has begun to pick, and the others, seeing blood, have followed her example. It is curious, but cocks of any breed will stand while the hens eat them, especially Spanish, and Dorking cocks will stand with hens pecking their combs on each side till the hens make a hole. You must immediately remove the cocks. Let all the peccant hens be well purged with castor oil, a table-spoonful every other day for three days. Then give turves of grass cut with plenty of mould, and, if you have any, some lettuce. We advise for birds that, being in confinement, have no access to grass. We have never known birds do it that were at full liberty. The cocks may be turned with the hens occasionally, and that is all that is really necessary.

Food for Swans (*C. W. D.*).—Much experience has taught us the best food is the cheapest; we therefore advise either oats or barley, the first for choice. Cygnets should always be fed in severe weather. The proper way to feed them is to put a small tub where they will see it directly, to cover the bottom with a sod of grass, this with oats, and then to cover the whole with water. Much waste is prevented, and it saves the food from the depredations of small birds. It is of course useless to put it anywhere but near the birds, as if uninterrupted it would soon be frozen. If refuse green food can be mixed with the oats so much the better.

Hen's Legs Spasmed (*M. B. D.*).—The spring-halt you mention is a bad symptom in a fowl, but it may exist for a long time without serious danger to health. We think constant meat-feeding injurious, and we believe if you do not discontinue it we shall often have you for a queriist. We should do nothing beyond giving castor oil, a table-spoonful every alternate day for three days.

Turkeys (*M. G.*).—As the Peacock. One visit in the proper season to the cock is sufficient.

White Dorkings (*F. W.*).—We consider the deaf ear almost unimportant, but if we had to choose we would have it red. The white one will probably be transmitted to many of his offspring. The accident of having one claw shorter than the other is of no consequence. It is an accident, as you say he has lost it. It is singular one of his descendants has the same. There is no fear of its being continued. We believe Mr. Martin's address is Claines, near Worcester.

Breeding Black Hamburghs (*W. U.*).—We advise the Spanish hen, if you have but one pen. If you are wise, you will have two and reverse the sexes. We say if you are wise, because you cannot breed perfect cocks and hens from the same parents.

Polands' Crests Dirty (*Aliquis*).—There is little cause to fear dirt in fine weather. The best breeder we ever knew used in damp, dirty, and wet weather to keep the top-knots up and clean by putting indiarubber bands round them. The crests should never be washed unless the birds are going to a show. It should then be carefully done with a sponge, wetting only the outside of the feathers, wiping them dry, and putting the bird in soft straw. Top-knots should never be washed, if it can be avoided. The most ornamental Ducks are Carolinas and Mandarins. They may be had of Messrs. Baily, Mount Street, Grosvenor Square. We do not know their prices.

Cochin-Chinas (*Recent Subscriber*).—Vulture hocks are long feathers growing from the thighs and projecting from the legs in a downward direction. Plucked hocks are those from which these feathers have been pulled. The vulture hock is a great disadvantage, and you are fortunate that your birds have it not. They are a good weight, but might weigh more. Where they are carefully attended to they should make a pound in every month up to 9 or 10 lbs. Get rid of every bird that has any feathers protruding from the knee.

White Feathers in Coloured Dorkings (*An Amateur*).—If your Dorkings belong to the general Grey class, the white flights are not even a disadvantage. Your description is that of very good birds. You may exhibit and safely breed from your pullets. They are not Silver-Greys. These latter must not have a white feather. Silver-Greys are birds of colour, and most difficult to get perfect. Grey may be of any colour except black and white. Dr. Campbell's are Grey birds. A Silver-Grey cock must have a perfectly black breast and tail, without the suspicion of white, very light hackle and saddle, and steeled bar wing. Baily's book on fowls devotes a chapter to Dorkings. It is the best time in the year to set Dorkings, and it would be no advantage to have the house artificially warmed. You may leave the cock with ten hens.

Brahmas Laying Double-yolked Eggs (*C. H. S.*).—A dose or two of castor oil to each of the Brahmas, say a table-spoonful every other night for a week, will put their secretions to rights, and cause two yolks to inhabit two eggs. If they continue dropping them from the perches, remove them; they must then lay on the ground. Is the rubbish to which they have access bricklayers' rubbish? if not, give them some. We can give you no cure for feather-eating. Try to find which is the culprit and remove her. If you can, let them out; they never do it when at liberty. No preparation is necessary to impart the brilliant tint to a Spanish comb. It is natural, and we have now cocks with combs of startling brilliancy. We should never use egg as an outward application to fowls.

Unicomb Hive (*An Amateur Bee-keeper*).—We have forwarded your query to Mr. S. B. Fox, who hopes to reply in our next.

Dysentery in Bees (*J. T. S.*).—Shutting-up your bees and placing the skep with the board underneath, "on the mild part of a greenhouse flue," though it may dry the board and warm the combs which are supposed to be frozen, will, it is to be feared, only aggravate the malady with which the bees are afflicted. Whether they are suffering from dysentery, or the complaint which Mr. Woodbury hypothetically named "dropsy," cannot be determined from the description given; but in either case it is to be remembered, that the diseased bees are surcharged with fluid or fæces, and consequently no cure can avail which does not make them part with their contents. It is very undesirable that they should do so within their hive, and whilst inclement weather lasts they cannot effect it outside in the open air. The cure for dysentery in winter, recommended by Dzierzon, will be found at page 475, of the ninth vol. of the Journal, and is as follows:—"The bees should be brought into a warm room with but one window, and that facing the south. The hive being placed in the sun a few feet from the window, its inhabitants are set in motion by a little food, either inserted within the hive or injected into it. As the bees take wing and fly towards the window many empty themselves, and the rest will do so when they reach and rest on the window-sill. Here the brown fæces must be sponged off as rapidly as they are ejected, lest bees soil themselves with them, and when all have had the required opportunity they will joyfully re-enter their hive, if the entrance be brought close to them." But one more convenient to put in practice, and which has been tried with benefit, is to wait for a mild sunny day when bees can with safety leave their homes. As soon as any are seen going abroad and returning, lift the skep from its resting-board (which will do no harm), and place it upon another that has been well warmed before the fire, and stimulate the bees to flight by administering a small quantity of food. When the board grows cold it may be replaced by the old one which has been cleaned and warmed, and if the process be continued for an hour or so, the lives of the best bees will be saved, and a large majority of worthless ones got rid of. Those bees that cannot fly should be destroyed, their presence amongst healthy ones can do no good and may do much harm. I have sometimes thought if the skep were placed upon a thin board resting on heated sand, that the heat would be retained a long time, and render repeated changing of the floor-board unnecessary; but as the board is liable to get soiled, the frequent changing of it is advantageous, and if this is attended to on the few fine days that occur at intervals during winter and spring, the hive, whether suffering from "dropsy" or dysentery, may ultimately master the complaint.

METEOROLOGICAL OBSERVATIONS,

Camden, Square, London.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude 111 feet.

Date.	9 A.M.					In the Day.				
						Shade Temperature.		Radiation Temperature		Rain.
1871. Jan.	Barometer reduced at 32° and Sea Level.	Hygrometer. Dry.	Hygrometer. Wet.	Direction of Wind.	Temp. of Soil at 1 ft.	Max.	Min.	In Sun.	On Grass.	
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
We. 25	30.054	30.3	29.5	N.E.	35.5	32 0	30.2	34.9	27.9	—
Th. 26	30.033	29.8	28.4	N.E.	35.0	33.6	26.0	71.1	24.9	—
Fri. 27	30.251	30 5	29.3	N.	34.8	34.4	25.4	60.8	24.8	—
Sat. 28	30.217	31.0	29.2	N.	34.2	33.8	27.2	45.0	25.3	—
Sun. 29	30.197	32.3	30.6	N.	34.0	36.3	30.2	43.8	29.8	—
Mo. 30	30.134	30.8	30.5	N.E.	34.5	32.9	30.4	38.9	30.2	0.012
Tu. 31	30.260	30.4	29.4	E.	34.2	33.5	28.8	36.7	25.4	—
Means	30.164	30.1	29.6	..	34.6	33.8	28.3	47.7	26.9	0.012

REMARKS.

25th.—Fine morning; slight snow about noon; clear in evening about 7, cloudy afterwards.

26th.—Very fine bright frosty day; brilliant night.

27th.—Fair; cloudless at night.

28th.—Dull and overcast throughout.

29th.—Dull and overcast throughout.

30th.—Overcast in morning; snow began about 11 A.M., and fell to a total depth of one-tenth of an inch.

31st.—Dull morning; brighter in afternoon; broken clouds in evening snow still lying.

A regular winter week, high barometer, northerly wind, and the mean temperature below freezing point. The 9 A.M. temperatures almost as uniform as last week, but 4·4° lower; the range in the week actually less, or only 10.9°—viz., 25.4° to 36.3°.—G. J. Symons.

COVENT GARDEN MARKET.—February 1.

Trade is somewhat brisker. Good dessert Pears are becoming more scarce. There have been heavy arrivals in the Potato market.

FRUIT.

	s.	d.		s.	d.		s.	d.		s.	d.
Apples	½ sieve	1	0 to	2	0	Mulberries	lb.	0	0 to	0	0
Apricots	doz.	0	0	0	0	Nectarines	doz.	0	0	0	0
Cherries	lb.	0	0	0	0	Oranges	℔ 100	6	0	10	0
Chestnuts	bushel	10	0	18	0	Peaches	doz.	0	0	0	0
Currants	½ sieve	0	0	0	0	Pears, kitchen	doz.	1	0	2	0
Black	do.	0	0	0	0	dessert	doz.	1	0	3	0
Figs	6oz.	0	0	0	0	Pine Apples	lb.	4	0	6	6
Filberts	lb.	0	0	2	0	Plums	½ sieve	0	0	0	0
Cobs	lb.	2	0	2	6	Quinces	doz.	0	0	0	0
Gooseberries	quart	0	0	0	0	Raspberries	lb.	0	0	0	0
Grapes, Hothouse	lb.	4	0	8	0	Strawberries	lb.	0	0	0	0
Lemons	℔ 100	6	0	10	0	Walnuts	bushel	10	0	16	0
Melons	each	1	0	4	0	do.	℔ 100	1	0	2	0

WEEKLY CALENDAR.

Day of Month	Day of Week.	FEBRUARY 9—15, 1871.	Average Temperature near London. Day.	Night.	Mean.	Rain in 43 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
							m. h.	m. h.	m. h.	m. h.		m. s.	
9	Th	Meeting of Royal Society, 8 P.M.	45.3	30.9	38.1	17	27 af 7	0 af 5	56 af 9	27 af 9	19	14 27	40
10	F		44.9	30.1	37.5	16	25 7	2 5	14 11	47 9	20	14 28	41
11	S		44 5	29.8	37.2	19	24 7	4 5	morn.	9 10	21	14 29	42
12	Sun	Sexagesima Sunday.	44.9	29 6	37.2	16	22 7	6 5	35 0	32 10	☾	14 28	43
13	M	[ral Meeting, 8 P.M.	44.3	29.6	36.9	14	20 7	8 5	57 1	3 11	23	14 27	44
14	Tu	Royal Horticultural Society, Annual Gene-	45.6	33.9	39.3	15	18 7	10 5	15 3	39 11	24	14 25	45
15	W	Ditto Fruit, Floral, and General Meeting.	47.0	31.3	39.2	17	16 7	12 5	29 4	after.	25	14 22	46

From observations taken near London during forty-three years, the average day temperature of the week is 45.2°, and its night temperature 30.3°. The greatest heat was 65°, on the 10th, 1831; and the lowest cold zero, on the 13th, 1855. The greatest fall of rain was 0.52 inch.

SETTING OF GRAPES.

MR. PEARSON, page 509 of the last volume of this Journal, remarks that it would be interesting if cultivators would state their treatment of Grapes, as he observes some are better growers of particular sorts than others; thus at one place will be found a champion grower of Hamburghs, and at another a champion Muscat grower. I do not call myself either, nor do I grow Grapes on a very extensive scale. The tastes of our employers ought to be the first consideration—some like Muscat-flavoured, others Hamburgh Grapes.

Muscats being our favourite Grape, I have endeavoured to grow them as well as I could, and with a little success. The difficulty I first had to surmount was the setting; this is easily done if attention is paid to drawing a dry hand over that part of the bunch which is in flower, and repeating the operation two or three times a-day until every berry is set. But there are Grapes which task the dry-hand system; two, Mr. Pearson mentions—viz., Canon Hall Muscat and Black Morocco. I will name another—Royal Vineyard. The cause of these three not setting is that "the anthers curl back at the moment the flower opens;" the ends always seem wet.

I have set Black Morocco and Royal Vineyard to a berry. Canon Hall I have not grown. My method is as follows. The hand is charged with pollen from the Muscat of Alexandria in flower at the same time. The hand must be dried at every application, and drawn gently over that part of the bunch in flower. Repeat this twice or thrice a-day until every berry is set. I have set these two so well that it became no easy matter to thin the berries.

I am of the same opinion as Mr. Douglas, that no one should decry a Grape or any other fruit until it has had a fair trial; this I have given the Royal Vineyard, and I have written in these pages about its bad setting and other bad qualities, such as liability to spotting, blotching, &c. I have tried it as a pot Vine, but cannot speak of its goodness when so grown; but I can say it is a good keeper as respects what remains of the bunches, and some like the flavour. On the whole it ought to have a place. I am to retain it.

Muscat Hamburgh [Black Muscat of Alexandria] is a splendid Grape when grafted on the Black Hamburgh. I have had bunches of it weighing 3½ lbs. I have not had it so black as Lady Downe's or Alicante, but in flavour it is far superior to either. Of Muscat of Alexandria I set every berry. I have had bunches 4 lbs. in weight, and berries 1 inch in diameter. Bowood Muscat is so much like it that I cannot see any difference, except that it sets more freely.

I do not place the slightest stress on preserving either a dry or wet atmosphere, apart from the dry-hand system. When my Grapes are in flower the paths and troughs are not full of water. As I grow different sorts in one house, my Hamburghs are all set by the time the Muscats are in flower, the only difference in the treatment is that the Muscats are at the warmest end, less air being given to them throughout; no front air is given until they commence colouring.

As I have already remarked I am not an extensive grower, but I have had early Grapes in April and late ones in February from two houses; perhaps it will not be out of place here to name the sorts I grow. Those in the early house are Muscat of Alexandria, Bowood Muscat, Muscat Hamburgh, Duchess of Buccleuch, Foster's White Seedling, and Black Hamburgh. These are planted inside. I grew last year in pots four on the back wall—viz., one Black Frontignan and three Black Hamburgh; between those in front, standing on the hot-water pipes, were two Lady Downe's and two Alicante Vines. The Black Frontignan was first ripe—on the 24th of April. Those on the back wall were well started in front before being placed against the back wall. In the late house, planted inside, are Muscat of Alexandria at the warmest end, Muscat Hamburgh, Golden Champion (not fruited yet), Madresfield Court (not fruited), Lady Downe's, Mrs. Pince's (not fruited), Royal Vineyard, White Lady Downe's (not fruited), and in pots four Black Frontignan and two Royal Vineyard.

I cut my last Muscat of Alexandria on January 23rd, also Royal Vineyard at the same time. I have eight bunches of Lady Downe's fit to cut now (January 25th); they look as if they would hang a month longer, but I will cut them with a good bit of wood, and if so cut and hung in any dry place they will keep until used up.

If a few notes on the management of borders, &c., will be of any use to an amateur who may want to have Grapes all the year through, or nearly so, with two houses, I will write again. [We hope you will.—Eds]—C. M. McCrow, *Nash Court, Faversham.*

PLANT CULTURE IN GLASS HOUSES.

Few sights in a garden are more attractive than a well-grown collection of healthy symmetrical pot plants; whether they are seen in a costly conservatory, or a plain unpretending structure, they are equally attractive and enjoyable. My purpose is not to enter upon the cultural details of any particular class, but rather to treat of the management of pot plants generally.

The first and most important point is to start with healthy plants of a sturdy, compact growth after their kind, and to strive to maintain them in a flourishing condition as long as may be desirable. The means to this end comprise clean flower-pots, suitable soil in a thoroughly sound and sweet condition, and a proper temperature in a suitable house. It may be well to take these simple conditions more in detail. No flower-pot ought ever to be used till it is washed clean; if this wholesome rule were attended to more strictly, unsightly pots encrusted with filth would not be so common, and the plants would not only look all the better, but be decidedly healthier. It is a good practice to have a couple of tubs of water standing near the potting-bench, one for soaking the pots in for a day or two after any plants are shaken out of them, and the other for

rinsing them after they are washed, so as to have them quite clean. It is highly important to have plenty of shed room, so that a portion of all the sorts of soil likely to be called for may be stored close at hand in the potting shed; a series of spaces with boarded partitions are best, and they present a very neat appearance. Thus there might be a space for silver sand, one for loam, one or two for peat, one for leaf mould, another for manure so decayed as to be a rich soil, another for charcoal, another for broken tiles, and so forth. In all these a full supply should always be kept. No practice can be worse than to go to the soil yard for soil just as it is wanted for the plants, for it is there exposed to all the vicissitudes of the weather; dried by the sun, and saturated by the rain, it can never be used with any degree of certainty.

Extremes of temperature are hurtful to all plants in a greater or less degree; when plants are subjected continuously to even a few degrees more heat than their nature requires, the effects are soon visible in the attenuated growth and delicate, or rather sickly, condition which they present, and which is even more hurtful than the stunted growth and discoloured foliage induced by the other extreme, yet from which a more favourable temperature will in most instances recall them. Take, for instance, a Pine Apple plant, which will, perhaps, bear more ill-treatment than any other; when subjected to an extremely low temperature its foliage becomes of a pale sickly hue, and many of its roots perish; but after such a trying ordeal a few weeks of fair treatment effect a marvellous change in its appearance, and from being a miserable, unsightly object, it becomes a flourishing plant, such is its wonderful vitality. But though this favourable change may be produced by judicious treatment, such faulty culture deserves no praise; the fruit of a Pine Apple, the flowers of any plant, so badly treated, invariably fail to develope that high degree of excellence usually visible in the crop of those plants whose vigour has sustained no check at any time.

In considering what kind of structure is the best for plant culture, the mind recalls many an old, almost flat-roofed house, with paint and putty perished, abundance of cracked glass, and immense heavy rafters, where plant-growing beset with difficulties has been practised, and yet a tolerable degree of excellence attained. The very best kind of plant house is a light airy span-roof, not too lofty, with suitable staging, and with a thorough command of plenty of heat and fresh air. With such advantages plant-growing is an easy and pleasurable affair, the abundance of light on all sides tending materially to promote an even and symmetrical growth in every part of a plant, so that the constant shifting and turning about become unnecessary. One of the most important principles in plant culture is cleanliness; given plants with clean foliage, clean pots, sweet soil, a pure atmosphere, tempered to suit the plant's nature, the woodwork, glass, and every part of the house clean, and success becomes almost a matter of course. Knowing the importance of all this, one cannot but wonder at the miserable style of plant-growing which is met with but too often. A host of plants crowded together in undersized pots, their long drawn-up shoots producing a few poor, puny flowers, are just a miserable set of caricatures, two-thirds of which would be better on the rubbish-heap, and the man who has brought together such a collection would be much more in his proper place with a fork turning that heap than inside a plant house. As Mr. Keane has told us, "it is better to grow a few plants well than many badly," for a few well-chosen plants brought by skilful treatment to a high state of excellence, must afford more real pleasure to all who see them, than the most extensive collection could ever do when spoilt by bad treatment and the absence of all those important conditions which I have endeavoured to enumerate.—Edward Luckhurst.

AMERICAN POTATOES.

It is quite pleasant to see the truth told at last by "D., *Deal*," about these wretched impostors. My experience entirely coincides with his. In 1869 I first planted the "Early" (!) Rose and Goodrich Potatoes. I was much struck with the vigorous habit of the former, it seemed so distinct and promising. In the month of July of that year I had some taken up for cooking, with some Ashleafs growing alongside. They were as large as these, but watery, nasty, and uneatable. In September I again tried them; the tubers were large and good-looking, but on being cooked with great care they were found to be harsh and dry, with a hard centre, and a flavour perfectly original, but so unpleasant—nasty according to our cook—that I gave them up for that year. The misnamed Early Goodrich came in with the Regents, but instead of being like that sort in flavour, the tubers were earthy, with a peculiar, *un*earthly, and most disagreeable flavour. The past season I again planted Early Rose in a deep loamy soil resting on sand, a soil in which Ashleafs are fit for the Queen. It was again tried in July, and found, as in 1869, quite valueless. In October some fine handsome tubers were steamed in one of Barlow's steamers, and again yesterday; they were dry and harsh—not floury like our English sorts, and *most* disagreeable.

I hear that the other American sorts are of the same disagreeable flavour as those I have mentioned. I saw last year a lengthened eulogium on the Early Rose Potato in one of our periodicals, and afterwards found it in the catalogue of a London seedsman. So the climate or the soil affects these Yankee products, for unless they were different in America, the Yankees are too sharp to give a dollar a-pound, as they did for the Early Rose.—Thos. Rivers.

DOYENNÉ D'ALENÇON *versus* EASTER BEURRÉ PEAR.

Remarkably like each other in appearance are these two Pears. The first-named is, indeed, in general considered as a mere synonym of the latter variety, and is given so in almost every fruit list. Place a few specimens of Doyenné d'Alençon before the best pomologist and he will at once say Easter Beurré. It is, however, quite distinct and much superior, and that is saying a great deal after the lavish praises that some writers have of late bestowed on the French Doyenné d'Hiver, our Easter Beurré. Easter Beurré is good if well ripened, which is frequently not the case. It only succeeds well in certain favoured situations and localities. It generally requires a wall, and is then frequently pastey and hard-cored. If there is one locality in this country better suited for Pears than another, it is assuredly the Royal Gardens of Frogmore, and it is just there that the striking difference between Easter Beurré and Doyenné d'Alençon is made manifest. Whilst visiting these noble gardens in autumn, Mr. Rose and Mr. Powell kindly directed my attention to the two Pears. Looking at them in the mass (several bushels), the distinction was plainly seen. In colour of skin the Doyenné d'Alençon is more yellow than the Easter Beurré, which is generally of a greenish tinge. In the shape, the difference is slight but distinctive. The eye of the Easter Beurré is set in a flat or somewhat hollowed depression, the end being rather broad. The Doyenné d'Alençon has the fruit drawing more to a point towards the eye, like a Williams's Bon Chrêtien, the eye set without any depression; when a number of fruits are examined this distinction is very plain. In flesh the Doyenné d'Alençon is yellow, the Easter Beurré white. The wood, the buds, the growth, and habit of the trees are also different, the former being more yellow, pointed, and pendulous than the latter. The most important distinction, however, is that the Doyenné d'Alençon is of finer quality than the Easter Beurré when grown under the same circumstances, as manifested at Frogmore. Grown as an open standard at Frogmore, the Doyenné d'Alençon produces splendid crops of fruit of the finest quality, which supply the dessert for the royal tables during the winter months, whilst Easter Beurré is, on the contrary, very often unpresentable excepting for its size. Here, then, is an important matter for our fruit cultivators; we find in Doyenné d'Alençon a late Pear of the highest quality, suited for open standard cultivation, and we shall have to thank Mr. Rose for almost a new introduction and a welcome one.—B.

IMPROVING THE GENERA VIOLA AND DIGITALIS.

The finest improvement of a British plant by the hand of the florist, I think, must be considered to be the Pansy or Heartsease. In suitable soils no other British plant gives such a variety of rich tints; it rivals in texture and gorgeous colouring the vegetable denizens of the sunny south, and hybridises freely with kindred species and varieties, as Viola lutea and purpurea, which may be said to be the ancestors of this lovely family. I can see no reason why other species of this extensive family may not be improved in size of flower, in vigour of growth, and in richness of colour as well as in fragrance. I am not aware of anyone having taken the Violas in hand in earnest with a view to improving them. The varieties of Viola

canina (sylvatica) and hirta are charming pot plants, and do not "fog off" so much under culture as Viola odorata and its varieties sometimes do. Once let us get a start with the best forms of Viola sylvatica and hirta, and depend upon it there will be produced endless variety. All we want is a good break from the normal condition of the plant, and by following up artificial fertilisation and judicious selection important results must be attained.

As an instance of what may be done by judicious selection, I may mention that some years ago I undertook to improve Digitalis purpurea, the stately Foxglove, through seeing a variety that accidentally grew in a garden where I was gardener. The variety that took my fancy was a white one very lightly ticked or mottled in the throat with purple. Contiguous to this plant grew a white-flowered one and the common purple; they seem to have fertilised each other freely, bees, too, being very fond of them. Among the progeny were several varieties, and in four years I had produced forty varieties of Digitalis purpurea, some of them most beautiful, and many far superior to the Digitalis gloxiniæflora now sold at the nurseries. In moving to another situation I unfortunately left them behind, and so lost them; one in particular had a large campanulate-shaped flower more than twice the size of the ordinary Foxglove, evenly lobed all round, with a white ground, the inside being spotted and blotched much in the way of an herbaceous Calceolaria, the blooms not pendent, but standing out at right angles from the stem. At that time I knew not the importance of these results, and I may say twenty years will elapse from that date before another such collection can be produced. I have mentioned this instance as one amongst many that must occur in the gardening world. All novelties should be carefully looked after, for many a floral gem has been lost through carelessness.—W. E., *The Gardens, Cromwell House.*

NOTES MADE DURING A TOUR IN IRELAND.

No. 5.

THE CHIEF SECRETARY'S, PHŒNIX PARK.

This is another of the Government establishments, and in some respects superior to the Vice-Regal Lodge; the grounds, if not quite so extensive, are equally beautiful, and the whole establishment is very secluded and complete within itself, although in the middle of a public park. There is in the grounds a curiously misshapen tree, the trunk resembling a man standing on the crown of his head with his feet in the air. There are also some fine examples of Arbutus and Sweet Bays—beautiful evergreens where the climate is mild enough for them, likewise a fine Cupressus funebris, very elegant and beautiful in its changing character, and in the kitchen garden are four very large pyramidal specimens of Cupressus sempervirens. This is a plant which in our race after new things is beginning to suffer neglect, and such is the fate of all. Nothing is fashionable but novelty. It is, however, as a plant-growing establishment that the Chief Secretary's has been so justly celebrated, and well the present gardener, Mr. Bowen, although a young man, upholds its reputation. Many of the plants here are such as would have done the producer credit at an exhibition at Chiswick in its palmiest days.

Beginning with the conservatory, this is a large, lofty, elegant structure adjoining the house; it is at times used also for theatrical assemblies, and well adapted it must be for that purpose. We do not find many occupants at the end of summer, except very large Acacias, Cordylines, Grevilleas, Palms, &c., all in good condition; when decked up, however, with the fine plants to be seen elsewhere, it would look charming. There is a group of extremely convenient half-span pits, where Mr. Bowen cultivates his plants with great success. The specimens of Alocasias, Crotons angustifolium and variegatum pictum, Marantas, Anthuriums, Medinilla, Stephanotis, &c., were very fine, showing high-class cultivation. In another lean-to house there were some good New Holland plants, such as Pimeleas, Genetyllis, Eriostemons, Rhynchospermum, and Correas. It is quite a treat to find these plants cared for now, the whole interest seeming to have centred, as regards plant-growing, amongst ornamental-foliaged plants.

On the north side of the kitchen gardens we enter a range, 250 feet in length, of rather lofty lean-to half-curvilinear houses. This is a fine range, and gives an air of great importance to the whole place. These houses are principally devoted to Vines, which, although old, seemed to do well, with plants underneath. There were some fine large specimen Palms, as Areca Baueri, Latania rubra, and Cycas revoluta. I noticed also an interesting variegated sport of the Lastrea Filix-max, pretty enough, but scarcely desirable. One division is fitted with a bed or pit in the centre, in which the fine-foliaged stove plants in pots are plunged and thriving well; then against the back wall, which is formed with a sort of arched recesses, there is another narrow bed or border, in which Musa Cavendishii was succeeding remarkably well. I do not recollect ever having seen Musas, not even at Sion, so thriving or giving such a great result from so small a space. The bunches of the fruit, and the fruits individually, were very large. Musas having such enormous leaves necessarily require a considerable space. In general they are planted in the middle of a house and occupy it. Here, however, Mr. Bowen, having them in these recesses against the back wall, forces them in little space, and fruits them with great success.

In the front of this long range of houses runs a parallel walk, the borders on each side of which are planted in ribbon fashion with Pelargoniums, Calceolarias, and other plants, along with dark-leaved Beet. The line of Beet, taken by itself, was superb, as, indeed, were many other vegetables just alongside. The pyramidal Pear trees near here looked well, were full of fine fruit, and evidently well cared for. Some Damson trees were enormously laden, and on the walls there was a great crop of Reine Claude de Bavay Plum, a most useful variety. I noticed also fine crops of that famed Irish Apple the Ecklinville Seedling and of King of the Pippins, and in the fruit room, a good one, were some fine examples of Beurré d'Amanlis and Louise Bonne of Jersey Pears. As regards out-buildings, sheds, and every convenience of that sort, few places can equal the Chief Secretary's, and in Mr. Bowen is found an able gardener.

WHITEFIELD LODGE, PHŒNIX PARK.

This is the residence of the Ranger, Mr. C. McDonald, truly a charming spot, situated to the north, and near the west side of this great park. The place is but a few acres in extent, yet it is rich in Conifers. It is the private policy of the Ranger or Park Superintendent. Here the late Mr. Wilkie, who for so many years held that office, gathered together and planted for trial specimens of all the most beautiful Conifers and other trees, and now Mr. McDonald, who has so worthily succeeded him, has the pleasure of observing them in all their beauty; and seeing them as they are to be seen here one cannot fail to admire them. It was Mr. Wilkie's fine and cultivated taste which led him to plant his private grounds with a collection of rare trees and shrubs, instead of the present popular gewgaws of ribbon borders and flower beds. The one is a never-ending source of pleasure and beauty, the others, although beautiful at times, a never-ending source of expense.

Whitefield Lodge is pretty and ornamental, not so large as it seems, but convenient. It looks well from the park in its nest of Coniferæ, the deep sombre green of which contrasts so forcibly with the pale deciduous leafage. Why are there not more Conifers planted in this park, seeing that they succeed so well, and present such a marked feature in the landscape? I have to speak here of no design in planting or laying out. They are simply dotted about here and there singly and in groups, on a smooth, well-kept grassy lawn. Some have been crowded, and so have injured one another; this Mr. McDonald is gradually remedying by cutting down some and removing others. Many of the specimens are superb, and exceedingly beautiful. I can only notice a few of the more prominent. First, then, Cupressus macrocarpa, of which there are two very large, spreading, handsome trees. These, whether by design or accident, are fully greater in breadth than in height. What a pity that this fine rapid-growing Conifer should be so frequently injured by frost! In most places north of the latitude of London, all the large trees of this were killed in 1866. Wellingtonias seem to do well here, one specimen measured upwards of 25 feet. Thujopsis dolabrata is here quite hardy; there is a fine example of the variegated form 5 feet high. Cedrus atlantica, the most handsome amongst the Cedars, is doing well; so, too, is Cedrus Deodara. Of Abies Pinsapo there is an extremely handsome tree about 20 feet high; Abies cephalonica is 30 feet; Abies orientalis, 20 feet, very handsome; Abies lasiocarpa, very handsome, 6 feet. I also noticed Abies Morinda, Abies nobilis, and Abies Douglasii, which did not seem so happy as it is to be seen in the north of Scotland. Of the Cupressus tribe, besides C. macrocarpa there is here one of the loveliest specimens of C. nutkaensis, or Thujopsis borealis, which it is possible to contemplate; always graceful as this plant is, the example here, some 15 feet in height, is surpassingly so. It is in character and habit of growth per-

fectly unique and distinct, being of a very graceful weeping form. It is extremely worthy of introduction as a distinct form. There are also a fine pyramidal example of Cupressus funebris, about 18 feet high, a fine old C. sempervirens, and C. torulosa. Forming a fine central object stands a splendid plant of Taxus Dovastoni, a fine weeping form, with a great flat head upwards of 20 feet in diameter. I noticed fine lines of Irish Yews, always very effective, Golden Yews, Chinese Junipers, Thuja gigantes, extremely useful and fast-growing, and many more Conifers seldom to be met with. Here also is a fine little example of Quercus glabra bearing acorns, a very beautiful evergreen shrub, also some large Weeping Ash trees. The whole place is replete with fine trees, and full of interest.

It was with no small degree of pleasure that I inspected the plant treasures here along with my friend Mr. McDonald, and his wife, and have to thank the latter especially for her warm hospitality. With Mr. McDonald himself the gardening public in this country and in Ireland are already pretty familiar, he having been gardener at Woodstock, Kilkenny, for many years, where he so altered and improved the character of the place as to earn the most warm and grateful thanks of his employers, and the public approbation of the whole country. It was his merits and talents as displayed at Woodstock, that led to his being selected for the high and honourable post he now holds as Chief Ranger of the Phœnix Park. A better selection could scarcely have been made. If Ireland had all its servants like him, there would be far less disaffection and more contentment amongst its people. But the day is coming, Erin-go-bragh !—B.

CEANOTHUS AZUREUS AS A CLIMBER.

I do not think amateur gardeners avail themselves, as they might do, at their villa and suburban residences, of the very many beautiful climbing plants for decorative purposes. Some years ago I was travelling through South Devon in the autumnal months, and was struck by the sight of a very charming climbing plant at least 10 feet high, which was growing against the side of a house near Torquay. It was literally covered with a mass of light blue flowers. I had never seen anything like it before, for it appeared to be an unknown plant in the midland counties in which I then resided. Upon my reaching home I sent a description of it to your valuable Journal, with an inquiry as to its name, and on learning that it was Ceanothus azureus I at once procured a strong healthy specimen, which I planted against a wall with a southern aspect, giving it a slight protection in the winter, and most amply it repaid my trouble, and soon covered a large space with its beautiful racemes of sky-blue flowers in August and September. Unfortunately, for want of better protection, in the very severe winter of 1860-61 it was cut down by the frost. I would strongly recommend any of your readers who reside in the warmer parts of England to give it a trial, and I am sure they will thank me for the suggestion. Against the side of a house or a wall with a southern aspect it will be found invaluable. It should be covered with matting in severe weather. Independently of its flowers, its beautiful deep green leaves are in themselves an ornament.

I never pass a cottage in the country with bare red walls but I long to cover them with some of our many beautiful and hardy climbers. How many a country house which now looks bleak and desolate, and often, consequently, remains tenantless, might be made cheerful and picturesque by the outlay of a few shillings in the purchase and planting some of the best hardy climbers, taking care, of course, that they are properly tended and nailed when once they begin to run up.—Hortator.

Death of Mr. Mann.—Our readers will much regret to learn that Mr. Mann, the esteemed Superintendent of Hyde Park, died on Saturday last. We believe his health had been failing for some months.

Botanic Gardens.—A recent number of *L'Illustration Horticole* contains an interesting paper on the Botanic Gardens of Kew, by M. André, prefaced by some details regarding similar establishments in Europe. From this it appears that the first was established at Padua in 1545, followed by that of Pisa; those of Leyden and Leipzig date respectively 1577 and 1579. The Montpellier garden was founded in 1593, that of Giessen in 1605, of Strasburg in 1620, of Altorf in 1625, and of Jena in 1629. The Jardin des Plantes was established in 1626, and the Upsal Garden in 1627; that of Madrid dates from 1763, and that of Coimbra from 1773. At the end of the eighteenth century, according to Gesner, more than 1600 kindred establishments existed in Europe. England comes late in the list, the Oxford Garden not having been founded until 1632, and long remaining the only one in the kingdom.—(*Nature.*)

HYACINTH PRIZES.

I am very pleased to see the letter of "D., *Deal*," in your Journal, in which he makes mention of the poor encouragement given to the exhibitors of Hyacinths this spring. I wrote a letter last autumn on the subject, but it seems to have been disregarded by the Council. I wish some one would make a stir in this matter, and let us have a really good spring show.

"D., *Deal*," mentions also that he thinks the prize for eighteen white Hyacinths is a mistake, and so do I, and every one else I have spoken to on the subject. I have a very good collection of Hyacinths now growing, but though I have eighteen white ones, I have only sixteen distinct, so I shall be shut out from that entry. Besides, as only 20*s.* are offered in the amateur class for six Hyacinths, I doubt very much whether I shall exhibit at all. This I much regret, as having a large collection, and having been successful for the last three years, I think I stand a very good chance. If the Royal Horticultural Society feel so disinclined to encourage the growth of these beautiful bulbs, could not we subscribe together and offer a prize ourselves? I would willingly do all in my power.—Amateur.

THE WINTER IN LINCOLNSHIRE, AND ITS EFFECTS ON VEGETATION.

The winter in central Lincolnshire has been the most severe and continuous we have had for some years. In point of extreme cold it has not reached so low by several degrees as the figures given in other counties further south. But a word as to thermometers. It is possible the great differences in temperature recorded at different places may be more differences of instruments than of actual weather or cold. The instruments vary in registering cold about as much as clocks and watches in registering time. Both require correcting by authority to render them accurate and reliable. The names of makers, however great their reputation may be, are not sufficient guarantee for the instrument's truthfulness. I have thermometers stamped with the names of the most celebrated makers, and on the faith of such names I felt myself safely pledged as to their accuracy, at least some of them, for I could not fail to notice their differences. However, on their being tested by corrected and authoritative readings at Kew, I found how far out I was in my reckonings. The instrument I had vainly taken as my standard was in every part of the scale 2° too low, and in one particular point as much as 5° too low. Out of ten instruments examined only one was exactly correct, and it is a little shabby-looking thing without any maker's name attached. All the others varied from the standard, and all varied also in different parts of the scale of each. So much for names and appearances, and the importance of adopting the best means of testing to insure exactitude and confidence in figures.

To resume. The winter proper commenced on December 21st. Although we had had some frosts previously, it came upon us suddenly, for the morning of the 24th brought with it 25° of frost. From the beginning of the frost to January 28th, thirty-eight nights, the thermometer has been, with the exception of only two nights, below freezing point, while for thirteen consecutive days the maximum did not reach the same figure. The greatest maximum reached since the frost set in was 48°, and we have only had one day anything spring-like—namely, January 17th. For six nights during the frost the thermometer registered over 20°, with several more approaching this figure. The lowest figure reached was 6° on the morning of January 1st, or 26° of frost. Thus we had, no doubt, an aggregate intensity and continuation of frost, calculated to inflict very serious injury on vegetation; and, unquestionably, the injury would have been serious had not the means happily brought with it the most effectual antidote—the snow. Nothing could have compensated for the complete protective covering it has afforded, nothing could have come more opportunely; its value is beyond calculation; it has been, in fact, the gardener's and farmer's friend, and has stuck to him in his difficulties as a good friend should. It has never been over 4½ inches deep, yet for fifteen days it never wasted a particle. Its good-keeping properties were due to the very dull weather which has charac-

terised the frost. For days together the sun was hardly seen; we have only had one really bright day since the year commenced, and only two half-bright ones, all the rest being decidedly dull. Another feature favourable to vegetation has been a striking absence of wind. Old millers say that they have not for fifty years experienced such a still calm winter. There has been no blowing of the snow in wreaths, but it has lain quietly, doing its protective work. It has also been a singularly dry frost. Since December 21st to the time of writing (January 28th) the rain gauge, and this includes the melting of the snow, has only received 0.59, or a little more than half an inch of rain. There was a slight break on the 8th and 9th of January, when the first snow melted and the green pastures told of its protective care. Two days afterwards we had 20° of frost, but our friend the snow was again to the rescue with a covering of 2½ inches. This melted on the 14th, and since then, although we have had frost every night, it has not been severe.

Taking a look round the gardens we must, with all the winter's drawbacks, and considering its length and inteneity, regard it as a fortunate one. Plantations of Cabbages, Lettuces, and Cauliflowers, which must, but for the snow, have been nearly all killed, are almost as green and fresh as ever; while Celery, Parsley, autumn-sown annuals, &c., seem little the worse of the ordeal they have passed through. It is different with things above the snow line. Broccoli which was left standing is nearly all killed, while that which was laid down is nearly all saved. Brussels Sprouts are partially injured, and so are all the Kales, except Cottagers' Kale. One thing has surprised me, and that is the hardiness of Asparagus Kale—Couve Tronchuda of some perhaps, yet a hardy type of it, as it has, with the exception of Cottagers' Kale above noticed, suffered less than any of the Cabbage tribe, thus possessing two important qualities—hardiness and excellence.

As to shrubs, it is almost premature to speak definitely, but little or no injury is at present noticeable. Some Roses are certainly injured, but I do not apprehend the lose is serious. In the field the root crops are rather severely cut up, not being well covered with snow, but the breadths of Wheat have as yet received no injury whatever. Fortune has thus come out of misfortune, and taking a broad view of what has been and what might have been, I am constrained to sum up the frost as a fortunate one. It has had at least this advantage of bringing out the sympathies of the rich towards the poor, and making the hard times easier. One good result we are reckoning on from the protracted cold, and that is the retarding of the fruit blossoms and tiding them over the spring frosts. The trees look hopeful, and a good fruit year is anticipated. But is the winter over?

P.S.—The weather changed on February 2nd. The thaw is steady, appears general, and is accompanied with rain.—J. Wright, *Gardener to Hon. A. L. Melville.*

SLOW-COMBUSTION STOVE.

Many inquirers have applied for information relative to the stove described at page 69, and, as might be supposed, the same queries are put, with some variations, by all. Space will be economised by covering the sum of the questions in one reply.

The chimney ought to descend. It must not rise, for the carbonic acid produced by burning charcoal is heavier than the air when cold, and so will not ascend in a chimney when it has lost its heat. In the article in the number of January 26th it is explained why the chimney should have a slight descent. The end of it farthest from the stove is best placed about 1 foot or 15 inches lower than the throttle. Charcoal is never so well made but that it contains hydrogenous compounds which form water during combustion, and this drips out of the descending chimney when the combustion is very slow. It is another reason for adopting this disposition of the flue. Coke will not answer. It contains a large quantity (about 12 per cent.) of earthy matter, and will not, in consequence, commence to burn until a high temperature is reached. It is difficult to light, and is not at all the fuel to use when slow combustion with a comparatively low temperature is required. The cast-iron plug used in Joyce's stove would answer perfectly in lieu of the gas pipe. The chimney need not be of zinc. Zinc does not oxidise, and is very readily made into pipes, for this reason I chose it. The fire is best lighted by placing some charcoal in an old saucepan, well perforated in the bottom, upon the fire. When the charcoal is burning up it can be safely carried to the stove upon a shovel or slate, &c., to prevent dropping, and poured into the stove, which can be filled up as far as required immediately. My stove was made by Mr. Groom, of College Street, Camden Town, for 12*s.*

Of the price of fuel I can only give my own experience. Mine was bought in Litchfield Street, Covent Garden. Six sacks, each containing about 4200 cubic inches, were sent eight miles to my house for 15*s.* At the same time, however, a similar quantity was delivered to a neighbouring friend. Supposing this to be a fair price, the cost of heating can be arrived at thus:—Not more than would fill the stove to the depth of 1 foot would be required in a severe frost during one night. The diameter of the stove being 6 inches, the area of the cross section would be = 6 inches × 6 inches × .7854. This multiplied by 12, depth in inches, gives rather less than 340 inches, not quite the twelfth of a sack—cost about 2*s.* 4*d.* I have had fire to keep out damp, frost, &c., and sometimes continued it when not needed, and my consumption this winter has been five sacks nearly; about 12*s.*

One correspondent asks why his gas pipe will not answer in cold weather. All gases hold a certain quantity of water in solution; more when warm, less when cold. The gas pipe exposed chills the gas, and the water held by it when it left the metre is condensed upon the inside of the pipe in the form of dew. This collecting soon fills the pipe in its lowest bend, then freezes, and the supply is cut off. The only cure is to have a pipe with a continuous fall to the greenhouse, and fix there a fall pipe to receive the water, which can be drawn off at intervals.—F. Cheshire, A.C.P.

WEATHER PREDICTIONS.

I fear I cannot endorse the opinion put forth by your correspondent, "Amateur, *Cirencester*," about the weather-prediction theory referred to at page 85 being always correct. The basis of this theory I take to be that when the first seven months of the year are dry, so that the rainfall for that period is less than 10 inches, a severe winter is likely to follow. Further, it was predicted by the gentleman who promulgated the theory that the present winter would probably be a severe one, the prediction appearing early enough in the autumn to insure its author every credit for not waiting for the event and then recording the prophecy. Applying the theory to former years here, I may say that there have been only two seasons during the last sixteen years that the rainfall of the first seven months of the year—*i.e.*, from January to July, both inclusive, has been below 10 inches, but there has been one in which exactly that quantity fell, and one in which there were 10.23 inches, and one case is added of an opposite character. The rainfall of the various years given beneath is for the first seven months alluded to.

1857	10.23 inches.	1868	10.56 inches.
1858	9 81 „	1860	19.00 „
1864	10.00 „	1866	19.66 „
1870	8.28 „		

Now, taking the winter of 1857-58, I find the following notice of it made: Autumn very fine, winter dry, spring dull.

Taking the ensuing winter 1858-59, the remarks made are: Autumn dry and fine, winter mild and dry, spring medium.

For 1864 I find recorded: Autumn mild but wet, winter wet and cold, spring fine.

In 1868 a mild, wet autumn was followed by a winter of like character, and an early spring.

1870 is too fresh in memory to require comment, but one or two instances where a hard winter has followed a season the reverse of that predicted may be given.

1860-61: Autumn wet but open till the middle of December, when some very severe weather set in, followed by a favourable spring.

1866-67: Autumn very mild, winter exceedingly severe, spring late.

The above being all at variance with the theory, show the uncertainty of weather predictions.—J. Robson.

The Effects of the Winter in Norfolk.—A thermometer on a north wall registered on the morning of December 24th, 4° Fahrenheit, and at 12 o'clock at night, 3°; on the morning of the 25th it was at 5°. There was a heavy fall of snow on both days. Several Roses are killed, Laurustinus is killed to the ground, common Laurels very much injured, Deodars and Pinus Edgariana very much browned. I am afraid some of the Pinuses are very much injured; they scarcely

show it yet. A plant of Maréchal Niel Rose against the south front of the Hall, I am afraid is killed; it was slightly protected. —E. Sendall, *Barningham Park, Hanworth, Norfolk.*

THE CHISWICK GARDEN OF THE ROYAL HORTICULTURAL SOCIETY.

On Tuesday next the Royal Horticultural Society holds its Annual General Meeting for the purpose of electing a new Council and office-bearers for the ensuing year, when the Fellows also will be made acquainted with the condition of the Society, and will have an opportunity of discussing matters with respect to its future management and arrangements. It would be well for Fellows, therefore, who are interested in the Society's welfare to attend the meeting and support the Council in their good work, or, if necessary, to unsparingly condemn it. From all outward appearances, as far as I have been able to judge, I have good reason to anticipate a very favourable report and a more pleasant balance-sheet than usual. I have faith in the present Council and office-bearers that they will not needlessly plunge the Society into debt; in fact their special mission appears to be to save the Society from the utter collapse which seemed to be threatening it last year. I hope and believe that the worst times of the Society are now past, and that the present season, 1871, will be the commencement of a brighter era for the Royal Horticultural Society than it has yet seen.

There is something, however, besides squaring accounts and making two ends meet. The Society was incorporated for the promotion of horticulture. This is the only legitimate aim and object of the Society. For a time this end was faithfully pursued, and immense have been the benefits derived by horticulture from the labours of the Horticultural Society in their experimental garden at Chiswick. There is no need to enlarge on this point, as Chiswick and the good it has done to horticulture are of world-wide renown. But can the same be said of the doings of the present Society? What portion of the vast income of this great Society is being devoted to the pure pursuit of horticulture? I scarcely dare to ask. Yet I ask this in the name of horticulture. As a horticulturist I do not forget that at the last Annual Meeting of the Society one of the most unwise proposals that ever emanated from a managing body was brought forward—that relating to the giving-up of our Chiswick Garden. Urgently as the sacrifice was advocated as necessary for the very existence of the Society, happily Chiswick yet remains to us—Chiswick yet remains for horticulture as *the* garden of the Royal Horticultural Society. It is greatly altered, it is true—reduced in size, shorn of its fine arboretum and most of its ornamental portions; but as now being remodelled it will prove far more useful as a great experimental garden than it has been for many years, if sufficient funds only be allowed for that purpose.

For the Society to give up Chiswick would be to give up all that it possesses of the most useful. Chiswick has to contribute even to the glorification of South Kensington. Without Chiswick or some other equally suitable garden—and where could that be found?—South Kensington could not exist. All the plants and flowers which are used for the decoration of South Kensington are reared and nurtured at, and forwarded from, the Chiswick Garden. Has it ever occurred to the Council to inquire how much such a supply of plants and flowers would cost, supposing they had to be procured elsewhere? I never see any mention of this as put down to the credit of Chiswick, which in all fairness it should be. Quoting now from official statements, I find that in the years 1868 and 1869 there were each year sent up to Kensington over 50,000 plants, which at a very low estimate would represent a value of £1200. That is what South Kensington would have to disburse supposing they had to be purchased from any nurseryman, and it is extremely doubtful if anyone could be found to supply the same quality of plants for anything like that sum. Chiswick also provides, and supplies to the Fellows, every year about 10,000 or 12,000 plants, besides many thousand cuttings of fruit trees, &c., from its magnificent collections, as well as about 100,000 packets of seeds, which may be, as some of the grumblers observe, of little account, yet by a great many they are appreciated, and they represent a considerable amount of value. These plants, cuttings, seeds, &c., which are supplied to the Fellows represent a value of at least £500. In addition to this Chiswick hands over in hard cash, as the receipts for the sale of fruit, &c., an annual average of between £500 and £600, which gives us, therefore, a yearly return of something like £2250 from the Chiswick Garden (and that, too, independently of the value or cost of any experiments that may be conducted, or reports and general information supplied to the Fellows and to horticulture), equal to the total expenditure on the entire garden. Chiswick, then, as I have shown, clearly pays its way without the subscription money of a single Fellow; and yet in the face of all this it was proposed to give Chiswick up, as there were not sufficient funds to maintain it!

Chiswick remains—at least about 13 acres of it, which are now being laid out in most admirable style by Mr. Barron. When the works now in progress are completed, and the contemplated arrangements carried out, Chiswick will be more complete and better fitted as a great experimental horticultural garden than it has been for some time. One of the most useful works of the Horticultural Society was the publication of its "Fruit Catalogue," and perhaps the best collection of fruits yet exists in the Chiswick garden. It is gratifying to learn that this is to be maintained, and that the attention of the Society is to be turned strongly in this direction in the classification, description, and elimination of our fruits, in which there is at present much confusion. The maintenance of a collection of our fruit trees true to name appears to me to be one of the Society's most important duties. It is one of the benefits which are keenly appreciated by nurserymen, who can depend upon getting their stock true. All fruits should be grown in the garden, proved, described, retained if worthy, if not, discarded at once. I cannot enter here, however, into what is the duty of the Society, or what might be done at Chiswick. The Society has now in its Fruit, Floral, and Scientific Committees such able bodies of men, that it only wants the wherewith and it could be done. A great deal might be done, yet it would be unwise to attempt too much. What is done at all in the way of horticultural experiment ought to be done well, and no restriction as to cost and care ought to interfere, otherwise the trial may be abortive. Sufficient means and discretion ought to be allowed the manager to conduct in the best possible manner whatever is attempted, so that the desired end may be obtained. Two-thirds of Chiswick having now been given up, surely the one-third can be maintained respectably. I ask the Council for this in the name of horticulture; I ask them for this as trustees of all great horticultural interests.—F.R.H.S.

VERBENA CUTTINGS.

I take off cuttings or side shoots in the second week of July, and, after pinching out the bud or flower, insert them into pans with sand, and apply warm water to half an inch above the sand. I place them in a closed frame with no shading, and take every precaution to apply three times a-day a little warm water, if the sun is unobscured and bright, to prevent their drooping. In nine days the pans will be filled with roots. When this is the case I immediately proceed to pot them off, putting five in a 3-inch pot, and replace them in the same frame as before, shading and keeping them close for three days. I then increase the amount of air and decrease the shading, not forgetting with my thumb and finger to stop or pinch to every third joint. I well harden them off before winter. In this way I never fail to secure a good supply of Verbenas. I have at present on the average thirty-five cuttings from each five cuttings of last autumn in the 3-inch pots.—J. F.

[There are many ways of attaining the same object, but we do not see the particular propriety of using warm water to cuttings in a cold pit in July; we would rather wait a few days longer for the rooting. As to the potting afterwards there can be no objection, quite the reverse; but many must have these plants in abundance, and yet not find room for the potting. The writer, to whose statement you allude, has had no trouble with Verbenas, either with or without potting, and therefore your plan, however successful, does not throw any light on the cause of the disease. We are reminded of the time when the black-spot leprosy appeared in many places among Calceolarias. There were numerous statements as to how these plants were managed successfully, and many prided themselves on their own skill and treatment until the disease came upon them, and they were forced to part altogether with some favourite varieties. Just so in the case of the Cucumber disease—some of the best Cucumber-growers made light of it; while others equally distinguished gave us the epitome of their practice, with the side hint that if such practice were closely followed there would be nothing seen of the disease. But as if to teach us how little we know, we may state that some of these

very men for several years have not been able to keep their Cucumber plants from the disease, though the plants seem to be healthy and vigorous enough at first. Some of these men have been distinguished growers of Cucumbers for thirty or more years, and now they are obliged to confess themselves completely beaten. Another man adopting the same practice, and only a short distance off, has never yet seen a symptom of the disease. In the case of the Verbenas to which we referred, something might be owing to the dry summer and the inability to water; but the cuttings struck well enough, and it was after they seemed well established, though the plants were small, that they began to give way, first at the point, and then downwards, until there was no life left. Though there might be something tending to disease in the cuttings, we do not think that, or anything in the management, wholly accounts for the result. It is not pleasant to acknowledge ignorance, but it is often the best and surest step towards gaining valuable knowledge.—R. F.]

DOUBLE-FLOWERED PELARGONIUMS AS BEDDERS.

I HAVE great pleasure in replying to Mr. McCrow's inquiries (see page 63), but fear my answer will not be so agreeable to him as he would like, my experience of double-flowered Pelargoniums on the whole not being satisfactory; nevertheless, it may be quite as important to make it known as if it had been more successful.

In 1869 I planted two circular beds, each 10 feet in diameter, with the only two kinds I had then in sufficient quantity—viz., Gloire de Nancy and Madame Lemoine, and judging from what I had seen of them the year before, I calculated they would turn out rank growers; but as the bed had that spring been heavily cropped with Forget-me-not, I thought the partially exhausted state in which it was would check the growth of the Geraniums—indeed, it was a mass of roots and quite dry when turned up—and as they had to be planted out of cutting-pots or boxes without any ball, I feared they would die if placed unassisted in soil in such a condition, I therefore, at planting, put a little good soil around the roots of each, and after giving some water left them to their fate. They all grew on quite strongly enough, but the flowers were never so numerous as to make the beds conspicuous, as Geranium beds ought to be, and the season being moister than last year, very few perfect heads were produced. The wet settling in the centre of the truss, decay set in long before it ought to have done, and a bad appearance was the result. Nevertheless, as I had several other kinds last year, and as a good bloom of a double Geranium is of much service for bouquet-making and similar purposes, I planted out some more, and the season being dry they succeeded much better, producing more flowers, and these up to September were less liable to decay, but after some showery days in the early part of that month, coupled with the longer dewy nights that followed, perfect blooms soon disappeared, otherwise they were much better last year (1870), than the year before. Still the liability of the central portions of each flower to decay is a defect in double flowers not easily surmounted. Varieties not so close-headed might be better, and I still hope they will prove useful. Perhaps the best position for double Geraniums is a vase; their tendency to gross growth is there effectually checked, and their elevated position enables them to shake off sooner than if they were on the ground the moisture which causes the decay of the flowers; some we had in that position last year were much admired.

Mr. McCrow is quite right in saying plunging Geraniums in their pots in the beds is not a new plan, for I have seen it practised quite thirty years ago, only the purpose then was different from that which Mr. McCrow mentions. At that time they were plunged in their pots in June, so as to be readily taken up again in the same way in October, but I have seen single ones often enough planted out in their pots, but their roots have a perverse tendency to find their way through the bottom of the pot, thus defeating the object, for they grow rampantly enough then. When a number of plants in pots are plunged together, the roots of some getting through, and those of others not, there results an irregularity of growth more unsatisfactory than when all the plants are strong, so that on the whole planting in poor soil is preferable.

In reference to the decay of the central pips or portions of Geranium flowers, I may further remark that the Nosegay class of single Geraniums are also more liable to this failing than those with broad petals. Last summer this was conspicuous here, for while such kinds as Cybister, Waltham Seedling, Stella, and Duchess of Sutherland might at one time be called the pride of the garden; Punch, Crystal Palace Scarlet, and some others far outshone them at the end of the season. —J. ROBSON.

AMATEURS BEWARE.

I HAVE before me the "Garden Oracle" for 1871, which is to me a new publication. It contains a great many useful tables, if they can be relied on. In looking over these tables I was particularly attracted by one headed, "Seed required for a garden of one acre." This list is begun with Peas 36 quarts! What gardener in his right mind would ever think of ordering 36 quarts of Peas for a garden of one acre? or if he did, where would he find room to sow them if he had anything else in his garden at all? And what amateur could afford, or would like to afford, such an expensive seed bill for one acre of garden? I consider that nearly all the quantities named are greatly in excess, but the most flagrant error in the list is "Sweet and Pot herbs 6 lbs." Does the editor of the "Garden Oracle" mean that the whole acre is to be sown with sweet and pot herbs? if so, I hope whoever tries it will be well-flavoured. To satisfy my curiosity I summed up the amount such an order would come to from the prices of Messrs. Veitch & Sons. I did not select any particular sorts, but took an average of prices, where there was enough variation to allow me to do so. Peas I priced at 1*s.* 6*d.* per quart, which gives £2 14*s.* for that one article; sweet and pot herbs 3*d.* per packet, or 1*s.* per oz., then 6 lbs. at 1*s.* per oz. would be £4 16*s.* Herbs for ever! The sum total of the list I make out to be £14 16*s.*

How long will writers of books and calendars be allowed to issue such lists as these to deceive the inexperienced amateur whom they profess to aid and assist? Practical gardeners know better, and are not so apt to be misled, but no doubt it is very difficult for amateurs, especially those who are for the first time about to try their hand at gardening, to make a suitable selection, either in quality or quantity. They will sit for a whole evening in the midst of catalogues and seed lists, studying the name of this and the price of that, till their brains get in a whirl, and they fly back as a last resource on some list of "Seed required for one acre of garden," only to find out the error they have committed when the day of reckoning arrives. I experienced the same difficulty in selecting seeds when I first commenced gardening on my own account, and had I then sent to my employer a bill of £29 12*s.* for seeds for a kitchen garden of two acres, I should not be sitting here to-night to tell the tale.—G. S.

DINNER-TABLE DECORATION.—No. 1.

No small degree of interest was manifested some years ago when prizes were offered at the Royal Horticultural Society's Shows for the best arrangement of flowers for the dinner-table, and the interest evinced was increased when other societies took the matter up, and manufacturers furnished designs for stands suitable for the flowers or fruits employed. As a consequence, great importance became attached to that part of the show where the dinner-table stands were exhibited, and comments in accordance with the ideas of the inspectors were varied, but in general the class of stands called March's stands received the most attention, and became for a time the standard by which others were judged. I ought, perhaps, to have observed, that prior to this prizes had been offered for collections of plants either in flower or not, that conformed to a certain size and could be made available for table decoration; but those exhibited certainly fell short of meeting the requirements of the time, hence the necessity for flower stands. At succeeding exhibitions the competition in dinner-table decorations was continued, and with increasing interest, ladies of the highest rank being amongst the competitors, and by degrees greater diversity was introduced into the stands prepared for the purpose, including some scarcely elevated from the table, the latter class taking many fanciful forms and many different names, while in conjunction with them might occasionally be noticed a stand of greater height.

As the viands are, as a rule, no longer placed in bulk on the tables of the great, the space at command for ornament has been much increased. Happily for the gardener or whoever has to carry out the decoration, the fashion still remains of covering the table with a white cloth, and nothing can possibly show-off to greater advantage the masses of foliage, or it may be high-coloured flowers, and at shows where designs for dinner-table decorations are exhibited, the white-cloth base is invariably present. Were it not also always so on the dinner-table, there would often be a difficulty in supplying in mid-winter a sufficient quantity of flowers that would look well upon a background of another colour, for the white affords scope for the display of almost everything that grows, but more especially of foliage of compound growth, to which it imparts an embroidered appearance. I must not, however, dwell longer on this point, but will proceed with some of the modes of furnishing flowers and foliage so as to produce the best effect as a whole.

Many years ago, when dinner-table decorations first attracted public attention, I ventured to suggest that every description of ornament that intervened between the countenance of one person and another at table was bad; in other words that nothing should be elevated more than 14 inches from the table-cloth, nor, if suspended, should it hang lower than 24 inches from the table, thus leaving a clear space of 10 inches for one person to see another. I find there are many converts to my views; even some of the stands assume to secure this, especially

those of the March pattern, which have a small cup for flowers on the top of a single glass rod proceeding from a pan of flowers on the table, but it usually happens that the pendant flowers so essential to the appearance of the upper basin occupy the line of view I wish to keep clear. However, others must determine whether or not the beauties of such things counterbalance their disadvantages; but it is certain that many ornamental stands do interfere with this line in a greater degree than those alluded to, and some in themselves are highly ornamental. I may here observe, that the most costly are by no means the most effective, silver and other metals seldom looking so well as plain glass when brought in conjunction with flowers and foliage, and carved work and ornament on metals are worse than lost when partially screened by the foliage, the plain parts alone looking well. I know much disappointment has resulted from this, and at exhibitions the costly articles of plate, though creditably set out with flowers, &c., have often been beaten by more common-looking stands of plain white glass. Perhaps, however, when a silver stand takes the form of an epergne, its richness and costliness may attract attention, but the floral display must not be overdone, and the fault of a great many such contrivances is, that the bowl for flowers is much too large, necessitating an unwieldy and unbecoming mass; but of late years there has been great diversity of designs, some being of glass with small baskets of the same material suspended from them in which to place flowers, and some are formed of china with sculptured figures, but I confess having a dislike to them, and in general I would give the preference to glass.

Although more might be said about the class of ornaments which are elevated a foot or upwards from the table, I will pass on to those of a dwarfer form, not but that there are many pretty tall designs, but as those which are of less height afford still greater diversity, and, what is of more importance, opportunities for an infinite diversity of design at a very small cost, and with an effect as pleasing as the other, I have the greater confidence in recommending it, and having had as much practical experience of the working of the affair as most people, I speak with the more assurance.

In the first place I consider that for a good display of floral beauty, or in its place that of foliage, on the table, the table itself ought to be wide—certainly not less than 5 feet, and if 1 foot more so much the better. The tables I have had most to deal with are between the two measurements given. Assuming the table to be lighted by candlesticks placed upon it, these are generally placed in a line down the centre, and say about 3 feet apart, and intermediate between these a stand of flowers, or it may be a plant, is often placed, while, possibly, some piece of plate or other ornament occupies the centre of the table, and the dessert dishes are placed about midway between the outer edge and the middle. The understanding being that the dinner is to be served *à la Russe*, a considerable portion of the tablecloth is available for ornamentation, and various are the modes in which this may be done. When a number of visitors are likely to remain for a week or more at a time it is advisable to change the design every day, and this may be done by adopting some of the means that will be described below, none of them being expensive; at all events great diversity may be secured at little more than the cost of preparing the materials at the moment they are wanted, and these at most country places are at command. I will therefore assume that the dessert dishes occupy positions about 18 inches apart along both sides of the table. We frequently make use of a set of troughs of zinc about 2 inches wide and about ¾ inch deep, and made in a half-circular form, so that when two are placed together they form a perfect circle or ring. These troughs usually have the sides painted green (but I am not sure but some other colour would do as well), and being filled with sand are dressed with such flowers as are at command. Early in the summer Roses are often used when plentiful, later in the season the flower beds yield Geraniums, &c., and in autumn Chrysanthemums. In all these instances it is advisable, before putting in the flowers, to dress the edges—that is, to fix some kind of foliage in the sand so as to hide the edges of the trough in a neat and becoming manner, yet without proceeding too far. All descriptions of foliage are not adapted for this purpose; the leaves of Roses answer very well, and those of Geraniums are not amiss. In winter we are often obliged to pick out suitable leaves of Ivy, as a leaf that sticks out at right angles does not look well; only such as lap over are suitable. Ferns, however pretty elsewhere, cannot well be worked in here. Sticking in the flowers is an easier matter, and I would certainly not advise more than one kind to be used, or at most two, while only one kind of foliage is wanted. To those inexperienced in such matters I may say that flowers of a blue, purple, or violet colour do not look well by candlelight, while scarlet, crimson, yellow, and white are very effective, and most star-shaped flowers, as Cinerarias, look well. A good proportion of green is also advantageous, especially when white or yellow flowers prevail, and these colours, when having a green border between them and the tablecloth, look better than most others. As flowers are very scarce in winter, it is often advisable to make the most of those which are to be had, and, having two or three sets of troughs, we plant one entirely with Selaginella denticulata some time before it is wanted, placing it on a hotbed or other medium affording bottom heat, in order that the Lycopod may make sufficient growth before it is wanted, and we then bring out that set in place of the made-up one, and its appearance on the white tablecloth is, perhaps, more pleasing than the floral arrangement. The overhanging sprigs are generally sufficiently numerous to hide the edge of the trough, and they show their beautiful configuration to the best possible advantage against the white background. Sometimes it has been thought advisable to stick in a row of light-coloured Pompon Chrysanthemum flowers along the centre, like a row of beads or buttons, but I am not sure that this is any improvement; it certainly destroys the belief that a living plant only is before you; and whether the floral display compensates for this or not I leave others to determine. At all events if flowers are to be used let them be only of one kind and one colour.

It will be seen that the troughs, being all semicircular (although of two sizes so as to meet any irregularity that may occur), are capable of being placed in a great number of forms, but one of the most pleasing is a series of scollops all around the tables, enclosing a dessert dish or something of that kind; perhaps a wider scollop may be wanted at each end, or it may sometimes happen that the troughs do not exactly touch each other in all places, but a little extra dressing will make up the difference, and to meet this difficulty we have a number of straight short troughs which may be worked in, but we seldom require them, either the one size of circle or the other sufficing for our purpose. When it is advisable to work the semicircles into a sort of serpentine form these short lengths come in handy, likewise when a square or a straight line is desirable; they are also useful to unite the curves, but in general the latter do their work well, and are capable of being worked into circles surrounding each object in the centre, or it may be at the sides; in fact, they can be arranged in several ways which will suggest themselves to the decorator.

In addition to the curved troughs alluded to, we have also sets of straight ones to form a straight bordering around the table; these are of the same description as the others, and are planted or dressed in the same way. They are from 1 to 2 feet long, with curved corner pieces. Generally they are placed all round at about 14 inches from the outer edge of the table, so as to leave room for the plates and other requirements of the company. Some admire them more than they do the curved ones, and they come in well as a change. There are, however, other modes of dressing besides those in which the trays are used, and sometimes very simple applications of very common things are better than more costly contrivances. Those I shall describe are mostly of this description, and I would invite opinions on them; at the same time the advocates of lofty stands for flowers, &c., will see that the contrivances above described do not in any way prevent such being used, neither do those which are to follow, excepting in one case where the novelty of the arrangement seems to forbid anything high intervening.

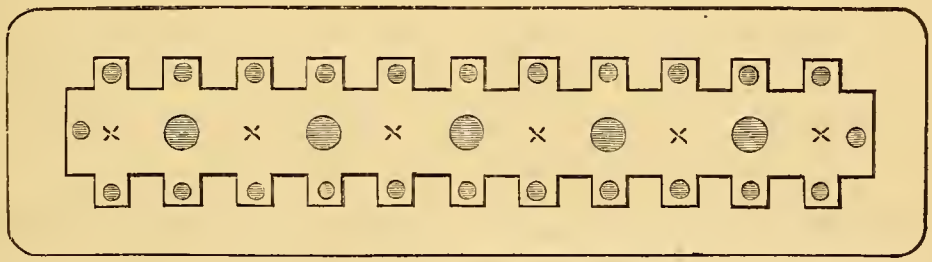
Where a long round of dinner parties has to be provided for, and that perhaps in winter, especially where bouquet-stands have to be daily made up for the drawing-room, and now and then tall stands for the dinner-table, the drain upon the flowers for these purposes leaves but few for what may be called flat-table decoration; consequently foliage alone, or relieved with berries, has frequently to be adopted. Here there is scope for great diversity of design, although the materials for the purpose ought to consist of small foliage only, as the extreme width of the figuring ought not to exceed 2 inches, and that without cutting-in any of the leaves, as is often done in preparing letters and other things of the kind for church decoration. Box is one of our greatest favourites, but we also use Yew, one or two kinds of Cypress, a small-leaved Phillyrea, and one or two others. Box, owing to the number of its bright

shining leaves, looks best at night; suitable sprigs are tied upon wire bent to the design fixed upon, and are quickly laid upon the table, care being taken to turn upwards as many of the leaves as can be done, and if the figure is of a pleasing character its effect is good. Of course, a knowledge of the position of the important objects on the table is necessary in order to work out the design to scale, which is not a difficult matter, as provision can easily be made for having some of the parts longer or shorter as required. With this object in view, it is advisable that the design should be in a great number of pieces, none of them more than 3 feet long following the curves, and few that length. We use galvanised wire that has become dulled by exposure, as most nearly approaching the colour of the stems of the evergreens, and no stouter than will merely bear handling and carrying about; twigs of evergreens are neatly tied to it with some dark coloured string, beginning at one end and making the top of one sprig overlap the butt end of the other, in the ordinary way of garland-making. Figures so made will last quite fresh a fortnight or more if kept in a cool moist place. We lay ours out of doors where they will not be dirtied, but will be exposed to all the rain and snow that falls.

Figuring of this kind, as will be seen, can be made to intersect the table in any fanciful form, like so much embroidery, and the deep green foliage stands out well upon the clean white tablecloth. Curves of, say, about one-third of a circle, may cross each other at their ends and form a continuous chain-work of elliptical links and lozenge-shaped ones alternately, which may each enclose something required on the table. This chain includes the ends as well as the sides, leaving the space of 14 inches next the outer edge quite clear for the plates, &c., the same as in the trough system; in fact, in all cases this space must be left untouched. The curves may also be formed into other designs. A little alteration from the above will allow of their being formed into what gardeners call the Florentine chain, which is a continuation of portions of the letter S overlapping each other; a still further alteration, but at the same time requiring a separate set of wire forms will make scrollwork, which, partly encircling the base of each dessert dish, looks very well, the whole being connected by the serpentine line; or the scrolls may be made to exhibit themselves on the open spaces of the tablecloth, but there is seldom room for this, and, as I have before observed, I am averse to any mutilation of leaves to form very fine work, which I have never found answer. There are many other modes in which this kind of evergreen embroidery in a curved or serpentine form can be wrought into agreeable forms, and I will now pass on to another class, which is straight work; here, again, there is great diversity.

Many years ago the writers on landscape gardening found great fault with straight lines, and avenues so planted were to them an abomination, consequently there are but few such at the present day of thirty or forty years' growth, but more recently their claims to importance have been recognised, fresh ones are being planted, and straight lines after all have been thought to have their merits; for the purpose at present under consideration I am not certain but they will be thought more ornamental and effective than curved lines, while their introduction alternately with these produces an agreeable change. In our case we use the same materials as with the curves, or rather use one of them; if the curves be of Cypress we make the next piece of Box, or of something else, on a wire frame, and mostly in short straight lengths. Sometimes it is advisable to have pieces like the letter L; and for a sort of Grecian pattern that will be described below, pieces bent so as to form three sides of a square are found very useful. One mode of using these straight pieces is to form a border all round the table, and to let other pieces cross each other in the centre diagonally, dividing it into a number of lozenges and triangles, a short piece uniting their points with the outer bordering in the manner of lead-casemented windows. Of course each square and triangle is expected to contain something wanted on the table.

There are also modes in which the straight lines can be called into requisition, and which will easily occur to the decorator; but that which has been generally most admired here



Dinner table, with twenty-four dishes of dessert, six candles, as represented by the crosses, and five stands for flowers. If there be a central object, as a piece of plate, only four stands will be wanted, and these, if necessary, may be in pairs, the two end ones being alike.

is a simple form of what I believe in architecture is called the Grecian fret, and which is represented in the accompanying engraving. A number of wire forms are bent into the shape of three sides of a square; the two angles, being right angles, are dressed in the manner described, and assuming the sides to be each from a foot to 15 inches in length, as may be required, one such piece is laid round the base of each dessert dish, with its points towards the central line of the table, and just as many single straight pieces of the same length as each side of the others will be wanted to unite the three-sided pieces together, the whole forming a design round the table, with every turning at right angles. Of course care must be taken to have the lines correct both longitudinally and crossways, and when neatly done, the agreeable simplicity of the design has generally found a greater number of admirers than more elaborate devices. Perhaps it may be incorrect to call this the Grecian pattern, as it contains so few turnings, and the battlements of some old towers exhibit all the angles. The design may be extended to any length of table, or made shorter at will.—J. Robson.

WORK FOR THE WEEK.

KITCHEN GARDEN.

The state of the weather prevents much being done in the open ground; but all tools may be sharpened and made ready for use. Cut Pea sticks, and prepare dung for forcing; shake it well to pieces when turned, and if it should be dry water it. If a constant succession of *Asparagus* is required, a bed should be made every fortnight till the end of March or beginning of April; a slight heat only is necessary. Keep the frames close, and cover up well till the shoots make their appearance, when they should have light and air. Seeds of the various sorts of *Capsicums* should now be sown in pots, which should be placed in a hotbed. If a sowing of *Carrots* has not yet been made it may now be put in on a slight hotbed, and covered with hoops and mats, or a frame, which may be removed in a month or six weeks if wanted for other purposes. If it is not convenient to prepare beds for *Potatoes* immediately, plant in small pots, and place them in any corner of the forcing house, where they can remain until they have made their appearance above ground; they should then be planted out, or be placed in a situation where they can receive sufficient light. I strongly urge the necessity of thoroughly turning up ground in which vegetable seeds are to be sown, and those who have allowed vacant ground to remain untouched should lose no opportunity of turning up the soil as deeply as possible, to expose it to the pulverising influence of frost; but while advising deep cultivation, I would not recommend bringing up the bottom if it

is poor and the supply of manure is short. After heavy rains and snow storms defective drainage will also be perceptible; a wet, badly-drained garden gives but poor supplies of vegetables in winter.

FRUIT GARDEN.

All pruning and nailing should be brought to a close as the weather will permit. Peaches and Apricots which have been taken from the walls to retard them until they are pruned, should not be left to the force of the wind, but be tied in bunches to the stronger wood till they are to be nailed up permanently. Fruit trees infested with moss should have as much as possible of it scraped off with a blunt knife or piece of iron hoop, and the parts well dusted with fresh lime, or limewash may be laid on with a brush. If the glaring appearance is objectionable, a mixture of soot may be given.

FLOWER GARDEN.

Those who have alterations to accomplish this spring in the way of planting and ground work, must lose no time when we have a favourable change in the weather. In planting large shrubs, it is an excellent practice to half fill the holes intended for the plant or tree with the rakings of the pleasure ground; this imparts to the plants an unusual degree of luxuriance, and of a most enduring character. Look over and correct the general outlines of ornamental plantations. Break into all hedge-like lines; form bold recesses where space will admit of it, and endeavour to create variety. The lines of irregular plantations or shrubberies should be corrected in this way at least every three years, as however well they may have been designed originally, the unequal growth of trees will, in some degree, militate against their first intention. Re-arrange masses of American plants; some of the more delicate Azaleas are frequently overgrown and injured by the grosser Rhododendrons. Biennials may be planted in flower borders or beds. Top-dressing Auriculas should be proceeded with on every favourable occasion. There are many kinds of manures recommended for top-dressing by different growers, but no manure is found equal to sheep dung, it produces a richness and brilliancy of colour in some varieties that cannot be surpassed—two parts of sheep manure in a very decomposed state, one part rich turfy loam, and one part decayed leaf mould; to this add a sufficient quantity of silver sand to colour it, and let it be well mixed previous to using. Having selected some of the strongest plants to commence with, proceed to examine them separately; turn each out of the pot in which it has been growing, with the ball of earth entire, to ascertain that the drainage is in proper order, and the earth free from worms and remove an inch of the surface soil from round the neck of the plant; a sharp knife is the proper instrument to perform this operation. Having removed the offsets fill round the neck of the plant with prepared compost, give the pot a gentle stroke on the bench, and a shake at the same time to level the soil. In planting the offsets it is necessary to divide them into three classes; those which are strong and well rooted may be potted singly in 60-sized pots; the weaker kinds that are moderately rooted are much better planted round the edge of the pots; and those with no roots may be planted similarly, but require to be kept in a warmer situation. The compost for offsets should not contain manure of any description, it should be composed of one part turfy loam, one part leaf mould, and one part peat earth, with a small portion of silver sand. In planting offsets without roots be careful to fasten them tightly at the neck; they strike under hand-glasses much more quickly than in frames. The planting of Ranunculuses should commence about the middle of February, as soon as the frost is out of the ground, and the surface in a fit state to rake. The beds must be made perfectly level, and the distance between the rows, 6 inches, should be marked on the wood edge; the bed is then ready for planting. It is a very important object to insure success in the cultivation of this flower, that the tubers be placed no deeper than 1½ inch; should they be either deeper or shallower a new and smaller one is formed at this depth to the serious injury of the variety. The best instrument to regulate the depth of the drill is a piece of smooth wood rather longer than the width of the bed, 5 or 6 inches broad, with notches 1½ inch deep at each end of one of the edges; the back of this board serves for levelling the surface, and by extending the cut edge across the bed the rows are marked. Then with a trowel scoop out the soil to the required depth, and to ascertain this press the notched end into the drill till it rests on the edges of the bed; plant the tubers by pressing them firmly into the soil, taking care not to break any of them, and cover them with the soil taken out of the drill. For strong-growing kinds ten tubers in a row are quite enough for a bed 4 feet wide; twelve or fourteen of the weaker kinds may be planted.

GREENHOUSE AND CONSERVATORY.

Luculia gratissima, when it has ceased flowering, should not get much water for a short time; pick off first the decayed heads of blossom, then cut the parts back moderately if they are loose and straggling, but if of a good shape stop all the shoots at a joint or two according to their strength. Do not venture to cut the plants back if they are not in good health, or without particular caution; they will probably not again break. Repot, top-dress, and clean all plants that require such attention; give air on every possible occasion, and no more fire heat than is sufficient to expel frost and damp.

STOVE.

Start such plants as Stephanotis, Dipladenias, Clerodendrons, both young and old plants, and recollect that a genial bottom heat is what they delight in. Do not at present excite Ixoras nor such plants as Franciscea macrophylla, which have set their bloom; but young plants of all kinds, to make the most of them, must be started immediately. Prepare tan or other fermenting material for renewing the bottom heat towards the beginning of March. Increase the moisture and temperature gradually as the days lengthen.

PITS AND FRAMES.

Propagate Dahlias by putting them in heat until they break, and then remove the young shoots, each of which should be potted in a small 60 or thumb-pot, and placed on a hotbed which has stood long enough to allow of the escape of the moist heat which would be fatal to the young plants; the frame should be kept as close as possible, and water given frequently, watching for any appearance of hot steam.—W. Keane.

DOINGS OF THE LAST WEEK.

On the 4th of February we lost sight of the snow, and were gladdened with a view of the green turf once more, the thorough disappearance of the white mantle being greatly owing to heavy rains on the preceding day. Altogether the week, up to the 4th, has been one of the darkest and mistiest we have seen, and though we have had a good proportion of damp days, the rainfall as a whole in this neighbourhood has as yet been very deficient, as our reservoirs of water too truly testify. By the 6th inst. we expect the frost will be out of the ground. Even on bare pastures, in many cases the soil is too hard a little beneath the surface to permit of the water from the melted snow passing freely away.

KITCHEN GARDEN.

Trenching and digging where practicable, and when time could be given, were here the chief work as preparatory for planting and sowing, as most early sowings are none the earlier now, and very early crops, such as Peas and Beans, are considerably injured. Sowings now, and repeated again during the month, will have the advancing sun to help them on. The whole appearance of the kitchen garden testifies to the appropriateness of the remarks lately as to having a good breadth of the hardier Greens, as they have stood the frost well.

Cabbages.—It is rather mortifying to read in the articles of coadjutors and contemporaries of the importance of filling up gaps in the main earliest quarters of Cabbages. Our fine-looking plants stood the first and most severe frosts well, and when the short partial thaw came we thought we were secure, and rejoiced; for what is better for an establishment than a fine quarter of early Cabbages? Now, though we protected them with Laurel branches, we find that the main crops are so much injured as scarcely to be worth keeping and filling up, and beds of young plants are very much injured, so that even young plants will be very scarce. Singularly enough rather small plants of Coleworts, grown chiefly for autumn use, and generally considered more tender than the Cabbages that furnish the first spring supply, have stood when the Cabbages have given way. This applies also to the young plants left in the seed-bed. They have wintered better than the supposed hardier kinds. As mentioned lately, those planted on a sloping bank to the north have stood the best of all, and we shall be glad of them, though they will not equal in size the fine fill-basket Cabbages from the main quarters. It will be interesting to know under what circumstances Cabbages have stood best. We suspect that the frost will have done most injury where the soil was richest and stiffest. The lowness and comparative warmth of the position would also aggravate the evil. Owing to altitude alone, we have often wholly escaped when gardens in

the valley have greatly suffered. We hope that in the light lands about Sandy and elsewhere there will be thousands upon thousands of healthy Cabbage plants, and that their sale at good prices will do a little to help the market gardeners in that district, as they suffered greatly owing to the drought of last summer.

We shall take up and pot some of our small plants that are left and put them in a frame with just the slightest bottom heat, so that the plants may have a number of fresh roots before being turned out. Many a plan must be tried to lessen the mischief which the long-continued frost has done us. We must also depend on the seedlings raised under glass, to be pricked-off and hardened-off before being turned out in the open ground.

Fortunately, Cauliflowers under hand-lights and other slight protection have stood well. The hand-lights had a little litter over them for a fortnight; Broccoli has also suffered much, except the hardiest kinds. Altogether we fear that vegetables will be scarce this season. We shall be glad to give more prominence than usual to Spinach, and that, Radishes, and Turnips must be obtained, if possible, earlier than usual.

Where seed *Peas* are no object, a nice supply for soups and even small dishes may be obtained by sowing the Peas thickly where there is a little heat and plenty of light, and cutting the tops over when 2 or 3 inches in height. At that size the soup will have much the flavour of Green Peas, as alluded to lately. Many a farmer might have delicious dishes of *Turnip tops* by making a slight hotbed, placing a frame over it, setting Swedish Turnips inside not too thickly, and cutting the tops when about 4 inches in height. If the tops are not higher the tubers will not be much injured for feeding stock. If preferred yellow instead of green, the tubers must be kept dark. Any warm place would do for this purpose.

Successions of Sea-kale, Rhubarb, Asparagus, Mushrooms, Potatoes, Radishes, &c., must be attended to, but these have lately received considerable attention. With a press of ground work and the retarding nature of the weather, it will not be easy to secure our usual forwardness in the kitchen-garden department.

FRUIT GARDEN.

Here, too, we are behind as to pruning and nailing, but we must try to expedite the first in all things except Peaches and Apricots. The bird question also often interferes with us as respects the smaller fruit. We hope that the Strawberry plants have not suffered. What we have examined, whether old or young, seem sound, owing to the protection of the snow. We have a strong belief that even the Cabbages most exposed, even of good size, would have withstood all the frost we have had, if it had been continuous. The partial and short thaws between made them more tender. We shall not be so forward as usual with Strawberries under glass, owing to alterations and fresh stagings in houses, but they look at present as if they would do well.

There could be no worse weather for *Peach trees in bloom*. We could do nothing more for them than keep them at a rather low temperature at night, give them a rise with air during the day, and with a thin flat board, used as a fan, make a slight breeze over the blooms to disperse the pollen gently. Partly owing to the sun of last season, the blooms seem strong and robust, and where thickly set we have thinned them considerably. In early forcing such thinning does much to insure a free healthy setting. Though heavy waterings are seldom now required, yet the roots should not be dry at such a period. The soil, therefore, should be examined, and all the more if the heating medium is close to the soil, or even under its level, the latter sometimes being the case in old houses. Of course we do not approve of any such plan, but many must make the best of what they have, instead of waiting until better means can be obtained.

Early *Vines* will also require much attention. Owing to the above causes ours will not be early, but have had the stems damped several times; though when a damp atmosphere can be secured there is less necessity for this syringing. We seldom syringe late Vines at all, either before or after they break. After they grow some length our water would not be clean enough. What moisture the leaves absorb from damp paths, &c., will be sure to be clean.

One great security for forward fruit houses in this and the late dark foggy weather is as much as possible to proportion heat to light, and then to give air, but mollified before it reaches the plants. A high moist temperature in such sunless weather is almost sure to be followed by watery spongy growth. Lowering the temperature five or more degrees, but so as to be safe, renders less atmospheric vapour necessary. Then, though as a general rule the vapour in the air of a house should be proportioned to the heat, it is easy to have too much of it when either Peaches or Vines are in bloom. The Peach will set best in a rather dry atmosphere, and though the air for Vines in a similar condition should not be so dry, neither should it approach saturation point. When the air is very dry, the little cap that encloses the parts of fructification is apt to bind them so closely that they cannot perform their functions. When the atmosphere is too saturated, the pollen is rendered lumpy and inert. For helping the pollen to act, in the case of Grapes, after trying brushes, fine feathers, &c., we have found nothing better than a dry clean hand drawn very gently along the bunch. For early Strawberries, too, we have found nothing better than drawing a dry hand through the trusses of bloom when they, too, were dry.

For all early houses with the *Vine roots* outside these roots must be protected from the cold, and if slightly warmed all the better. The simplest mode of doing this is to cover with litter, fern, &c., early enough in the autumn to prevent the heat of the summer stored in the soil escaping. Every day we see more and more the importance of planting Vines, &c., inside the house, though most of ours are planted outside; and even when we renew them we cannot help ourselves unless the whole internal arrangements as respects heating, &c., were altered, and these matters are not easily done. Of course our Vines are taken into the house through holes made on purpose, and one great disadvantage with us has ever been the rats finding their way to such holes and gnawing the stems, notwithstanding every possible means to deter and catch them. With one or two exceptions they have rarely meddled with the fruit. We would never think of so planting a new vinery. Under such circumstances the borders must be protected, and all the more in early houses. If fermenting material is used care should be taken that the heat is not too strong, and a trial stick, and, better still, a thermometer, should be inserted in the border 3 or 4 inches from the surface. From 65° to 80° would do no harm for short periods, but it is well not to exceed that. The average of 70° will tend much to encourage fibres to keep near the surface; the only disadvantage arising from such covering is that it should not be taken off soon, nor altogether at once, so as to give the border a chill. We have sometimes had the fruit of early Vines nearly ripe before removing it; and we know of many first-rate early Grape-growers, even when the Vine roots are not all outside, who seldom remove the covering from the borders until the berries colour. Of course with later houses such care is less necessary; but in medium houses as to earliness, many failures take place from giving a high temperature to the stems and branches whilst the roots are comparatively cold, and there is therefore no reciprocal action.

A number of years ago we met, when in the position of an under-gardener, with a striking example as to Vines partly under our charge, which we have never forgotten. The Vines were planted outside, and introduced through the front wall. In one year there was a splendid crop, ripening in August, without any care or covering being bestowed on the outside border. The next season it became very desirable that the same Vines should ripen their crop fully two months earlier. There was nothing done to the border outside, except a few inches of litter put on a narrow part of it in December, the rest being occupied with an artistic geometrical figure in Box, which it was felt very undesirable to disturb; otherwise the usual routine inside was gone through. The Vines broke well and showed well, but just as the bunches were lengthening and coming to the flowering period, a sudden check took place, the points of the bunches turned up, the central stem of the bunch became yellowish, many bunches became nothing better than tendrils, the little white globular dots in the shoots disappeared, there were no condensed drops of dew on the points of the foliage in the morning, and a very inferior crop, next thing to a failure, was obtained, instead of the grand crops before and afterwards. The Vines had used up the reserves stored in the past season, and the inert roots were unable to yield a further supply at a critical period, and the most valuable part suffered first. We believe if the roots had been close to the surface the failure would have been more complete. We thought then, and we are more confident of it now, if towards the end of October from 12 to 18 inches of dry litter had been placed securely on that border to the width of 15 or 18 feet, or if a month later some fermenting material had been placed over it to make and keep the surface warmish, so as to excite action in the roots, that no

such sudden check would have taken place. In such cases, then, let us so far teach by precept rather than example, and advise planters of Vines in houses to be forced at all early to plant inside, and have at least a portion of the roots inside, and even then to give some protection to the outside border in winter.—R. F.

TRADE CATALOGUES RECEIVED.

Archibald Henderson, Sion Nurssry, Thornton Heath, Croydon.—*Catalogue of Garden, Agricultural, and Flower Seeds.*

Little & Ballantyne, 44, English Street, Carlisle.—*Catalogue of Garden, Flower, and Farm Seeds, Implements, &c.*

William Thompson, Tavern Street, Ipswich.—*Descriptive Catalogue of Flower Seeds.*

Y. Strachan, 4, High Street, Wrexham.—*Catalogue of Agricultural, Vegetable, and Flower Seeds, &c.*

E. G. Henderson & Son, Wellington Road, St. John's Wood, London, N.W.—*Catalogue of Flower Seeds.*

F. & A. Dickson & Sons, 106, Eastgate Street, and Upton Nurseries, Chester.—*Catalogue of Vegetable and Flower Seeds.*

T. Bunyard & Sons, Maidstone and Ashford, Kent.—*Descriptive Catalogue of Vegetable, Flower, and Agricultural Seeds.*

S. Dixon & Co., 48A, Moorgate Street, London, E.C.—*Select List of Vegetable and Flower Seeds.*

James Dickson & Sons, 102, Eastgate Street, and Newton Nurseries, Chester.—*Catalogue of Vegetable and Flower Seeds.*—*Catalogue of Forest Trees, Fruit Trees, Shrubs, &c.*

TO CORRESPONDENTS.

Books (*T. E.*).—Johnston's "Physical Geography," Brown's "Forester's Guide."

Seeds (*H. H.*).—Any seedsman could obtain those you mention if any are in the market.

Kew Gardens (*A. B.*).—Write to Mr. Smith, the Curator.

Pronouncing Dictionary (*I. Barrett*).—No such dictionary of the names of plants is published.

Potato Culture (*T. Edmond*).—The pamphlet you name was written to *sell*. It is a tissue of ignorance.

Parsnips not Forked (*Crondall*).—Trench the ground two spades deep, and turn in manure with the bottom spit. If you enclose seven postage stamps with your address we will send you by post "The Rabbit Book."

Cucumbers.—"W. G. W." writes to us that "H. N." may probably obtain Tindall's No. 2 Cucumber seed of Mr. Milan, seedsman, Doncaster, or Fisher, Holmes, & Co., seedsmen, &c., Sheffield; but to make sure, "H. N." might send to the raiser, Mr. Tindall, gardener, Sprotborough Hall, Doncaster, where "No. 1" and "No. 2" are grown extensively. For Thomas Eads, our correspondent adds, Dale's Conqueror Cucumber seed is rather scarce; but, probably, if he applied to Mr. Thomas Dale, gardener to Mrs Tetley, Armley, Leeds, he would either supply him with seed or give the desired information.

How to Plant a Border (*J. W. B.*).—We do not plant borders, we merely criticise proposed plantieg. We presume you mean hardy annuals. The following would look well:—1, Silene pendula, or Saponaria calabrica; 2, Nemophila insignis; 3, Clarkia pulchella alba; 4, Viscaria oculata; 5, Erysimum Perofiskianum; 6, Blue Branching Larkspur.

Fowls' Dung for Roses (*W. G.*).—You had better mix the heavy soil with the light soil in which your Roses are growing, and do not apply manure until the flower-buds appear.

Leggy Zonal and Tricolor Pelargoniums (*G. G.*).—The only way to make them bushy plants will be to cut them down now, leaving to each shoot two or three eyes, and if you could encourage fresh growth by placing them in a house with a temperature of from 45° to 50° they would break more freely. The cuttings, inserted singly in 3-inch pots, would make good plants by bedding-out time if struck in a gentle hotbed, their growth encouraged, and then hardened well off by planting-out time. The "Garden Manual," Keane's "In-door Gardening," and Keane's "Out-door Gardening," price 1s. 6*d.* each, will suit you.

Yellow-flowering Annual (*A Poor Man*).—The best yellow-flowering annual, 9 inches to a foot in height, is Nasturtium Tom Thumb, yellow.

Turf Bare under Lime Trees (*Lime Trees*).—November is much too late to sow grass seeds, and to that we should attribute their bad growth. It is likely some of the seeds have vegetated, and that others will do so in spring, but we think your only plan will be to sow again early in April.

Zea Japonica variegata and Canna Treatment (*An Amateur*).—There is no particular treatment required by these plants in summer, for if there were their value for out-door decoration would be small. They require a situation protected from winds, but it should be open and warm. A rich light soil is most suitable, enriching it with leaf soil or well-rotted manure. Water should be plentifully given in dry weather, and sprinkle them overhead on the evenings of hot days. Shelter, however, is the main essential, for in exposed situations their leaves become torn and broken by the wind, and are then very unsightly.

Raising Roses from Seed (*W. C.*).—Rose seeds require time to vegetate, and had better be kept in tolerably moist cool soil before they are finally introduced into heat; then, when the outside shell of the seed is beginning to soften, sow thinly in boxes in a propagating house, being careful to keep the young shoots near the light when they first appear. The seeds should be mixed with soil and put in a cool moist place soon after gathering—when they are thoroughly ripened—and finally sown early in the spring—in February. Prick them out in boxes, pot off into small pots, giving shifts as required, and keep them in a cold frame the first year. Plant out the following spring in April or May. A few of the strongest and most forward plants might be planted in October the same year, if the seeds push quickly after being sown. As a general rule, so long as there is plenty of light and air, and the seedlings are not drawn up, it is better to give plenty of heat and push them on quickly. Mice are great enemies to the seed, and care must be taken in storing it in the first instance so as to be safe from their ravages.

Solanum capsicastrum Seedlings (*J. B.*).—We have our plants in a greenhouse, and they are loaded with bright red berries. Some are in 9-inch pots and grown as standards on stems 2 feet high, with very handsome heads 18 inches in diameter, and others are trained as pyramids. We advise you to turn the plants out of the pots in March, remove all the soil that comes away freely from the roots, and repot in 6-inch pots; or if pots of less size will hold the roots and balls without cramping, use them. Good drainage is necessary, and a compost of light turfy loam two parts, used rather rough, and one-third leaf soil or old decayed manure. Place the plants in a light airy position, keep them clear of green fly, and remove any irregularities of growth in April and again in June, shortening the long shoots so as to form compact plants. This is all the treatment we give our plants, and they could not do better. Repot them in June, or in May if the pots are full of roots. Do not give a large shift. For 11s. you may obtain a case of drawing instruments, except scales, of most stationers and of mathematical instrument makers. Instruments of inferior quality may be had for much less.

Climbers for South Wall (*Lancashire Subscriber*).—Berberidopsis corallina, Caprifolium luteum, Clematis Jackmanni, Glycine sinensis, Lardizabala biternata, Bignonia grandiflora, Clematis Standishi, C. Helena, Roses Gloire de Dijon and Maréchal Niel, Jasminum officinale grandiflorum, and Ceanothus floribundus. We do not advise the above, but would have all evergreens—viz., Ceanothus azureus, C. floribundus, C. integerrimus, Arbutus procera, Escallonia macrantha, E. montevidensis, Garrya elliptica, Ligustrum japonicum, Cratægus Pyracantha, Cotoneaster microphylla, Berberis stenophylla, and Magnolia grandiflora, Exmouth variety. These are shrubs, but suitable for walls or trellises against walls. For the trellis outside the front door we would have Cotoneaster microphylla and Pyracantha. There are no evergreen climbers that would suit, except Ivies.

Climbers for Conservatory (*Idem*).—Habrothamnus elegans, Hoya carnosa, Jasminum gracile, Kennedya inophylla floribunda, K. Marryattæ, Lapageria rosea, Mandevilla suaveolens, Passiflora Comte Nesselrode, P. Countess Ginglini, Tacsonia Van-Volxemi, Tecoma jasminoides, and Rhynchospermum jasminoides.

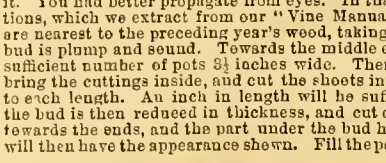
Expense of Making a Drive (*P. J. S.*).—We have paid 2s. 6*d.* per 10 feet for taking out a foot deep and throwing into carts, the usual price being 3*d.* per square yard, and for carting not more than a quarter of a mile 3*d.* per yard extra; or 6*d.* per yard altogether for reducing the ground 1 foot, which is 2s. 9*d.* per rod. The rubble will cost about 1s. per load, and the carting about 1s. 6*d.*, and will set 3 to 4 square yards, three loads being sufficient for two rods, consequently one rod will cost 3s. 9*d.*; and the metal, 4s. 3*d.* per 54 cubic feet, will cover two rods sufficiently, which with cartage will cost 7s. 3*d.*, or 3s. 7½*d.* per rod; in all 10s. 1½*d.* per rod.

Top-dressing Lawn (*Old Subscriber*).—If you now give the lawn a good top-dressing of lime and soil we do not see the necessity for the bone dust in March, though there is no objection to its use, as the lime, from mixing with the soil, will not have any injurious effect on the bone. If we gave the bone dust at all, which we would not this year, we should apply it all over. It is one of the best, if not the best, of manures for grass, and the most permanent.

Currant and Gooseberry Cuttings (*A Subscriber*).—Now is a good time to put in cuttings of these. Dig the ground well, and insert them 3 inches by a foot apart. Remove the eyes from the part inserted in the ground, which should be two-thirds the length of the cuttings.

Six Potatoes and Peas for Exhibition (*Idem*).—Victoria, Red-skinned Fleurball, Huntingdon, Berkshire Kidney, Webb's Imperial, and Dalmahoy, three kidney and three round kinds. Of Peas for September, Veitch's Perfection, Maclean's Premier, Ne plus Ultra, British Queen, Dwarf Green Mammoth, and Champion of England. Why grow so many?

Vine Cuttings (*New Beginner*).—If you employ cuttings, each should have two eyes, one to be above the surface, and the other 2 inches below it. You had better propagate from eyes. In that case follow these directions, which we extract from our "Vine Manual." Prefer the buds that are nearest to the preceding year's wood, taking care, however, that each bud is plump and sound. Towards the middle of December have ready a sufficient number of pots 3½ inches wide. Then, about New Year's-day, bring the cuttings inside, and cut the shoots into short lengths, one bud to each length. An inch in length will be sufficient. The part behind the bud is then reduced in thickness, and cut off in a slanting direction towards the ends, and the part under the bud horizontally. The cutting will then have the appearance shewn. Fill the pots nearly to the brim with soil, composed of fresh good loam, leaf mould, and very rotten dung, in equal parts, and with a small dibble insert one bud or eye in each pot quite overhead. Place the pots in a propagating-house, on a platform covered with sand, with a heat of 70°. At first, however, a temperature of 50° will be sufficient, and raise it 5° every week till the maximum is reached. A moist atmosphere should be kept up in order to cause the eyes to swell and break kindly. In a month or six weeks every bud will be breaking through the soil and forming roots. Keep the soil regularly moist, but not wet, for too much water would cause some to damp off. As the leaves begin to expand more water may be given.



Vine Leaves Unhealthy (*G. W. C.*).—We do not think any of the Vine leaves sent us have been infested with red spider, but they seem to have suffered from a current of cold air, or steam arising from sprinkling water on the heating medium whilst very hot. The leaves are too young for red spider, but they are so thin that we think if likely they will be attacked by it, therefore keep an outlook for it; and to ward off its attacks paint the hot-water pipes with sulphur brought to the consistency of paint by a solution of 4 ozs. of soft soap to a gallon of water, which will

cause the sulphur to adhere. By giving a little more heat now that the Muscats are flowering, and by attending to artificial impregnation, you may succeed in setting them fairly; this effected, you may grow tolerably well Muscats, Sweetwaters, and Black Hamburghs in the same house, but you would have a greater certainty of success if there were a division separating the Muscats from the Sweetwaters and Hamburghs. We can give you the recommendation you require for the Royal Horticultural Society's examination.

Cucumbers Deformed (*W. C. C.*).—The cause of your Cucumbers clubbing or having a knob at the end is they are seeding, which may be due to the stock you have being worn-out or old, or the plants may have been a long time in growth. We know of no remedy but fresh seed and young plants that have been grown without check. Perhaps a little more heat and atmospheric moisture would remedy the evil, giving weak liquid manure occasionally, as well as a top-dressing of rich light compost, and removing some of the old soil.

Mushroom Bed (*A. D., Herts*).—We cannot reply to your query unless you tell us where the bed is to be.

Osier Bed in a Damp Meadow (*Rosemary*).—If the expense is not too great it would be best to trench the ground before planting, at least it ought to be dug so as to turn the turf and other herbage upside down. Put in the Osier plants or cuttings as quickly as possible afterwards; both would grow by merely planting them on the turf, but not so well, and the rank herbage would be very troublesome in summer, and injure, if not choke, the small plants. Osier plants would be better than cuttings, but the latter will do; at the same time be careful to ensure planting only good varieties and such as are suitable for the desired purpose A strong coarse Willow is best suited for hampers and similar purposes, while a smaller one, tough and solid, with scarcely any pith in its centre, is the best for fine work. You had better consult some neighbouring basket-maker about the kind most likely to be wanted, as we know of some disappointment arising from not making such inquiries.

Avoiding Red Spider (——).—There is no better plan for preventing red spider appearing on the Strawberry plants in the vinery than using a moist atmosphere, washing the walls with sulphur behind the Strawberries, and also smearing the hot-water pipes with sulphur; the pipes or flues should not be warmer than about 170°. If there is a flue in the house, do not put sulphur at the warmest end. All fumes below that temperature will be safe, but beware of having strong fumes when the Vines are setting, and whilst the Grapes are small.

Bark Bed for Cuttings (*A Subscriber*).—Tanners' bark will do excellently for a bed with a frame over it for striking cuttings, &c., at the end of February, in March, and onwards. The bed should be made a fortnight previous to use in order that the tan may be sweet. To make a small striking house with a flue, you could not do better than adopt a modification of the plan recommended to "T. M.," at page 91, for a Cucumber house. We would surround the flue with open rubble—a light layer on the top of the flue—then washed gravel, then tan, sand, ashes, or cocoa-nut fibre.

Vines in Pots (*H. Foy*).—As to fruiting the Vines in pots, you will only succeed by keeping them in pots. Your proposed mode will answer very well. A bottom heat of from 70° to 80° will do after the Vines break, and for top heat from 60° to 65° until the bunches are pretty well formed; then when they begin to show bloom, raise the temperature gradually to 70°. We are not sure if we understand your object in placing the Vines in the hothouse. (*M.*).—It is not the fault of the Vines that they show no signs of breaking while standing on a stage in a dry house for ten weeks, with a night temperature of from 40° to 50°, and a day temperature of about 55°. You must moisten the canes of the Vines with a syringe, and keep the stage moist in sunny days, unless you place evaporating-basins on your pipes; then gradually increase the night temperature in a week to 55°, and in another fortnight to 60°, with a rise of from 5° to 15° in bright sunshine from sun heat, and with air given early. Then the Vines will soon show signs of moving. We cannot tell you how often to water at the roots, that will depend on the heat and the weather. Such Vines might want water every alternate day, and might not want it for ten days. The soil should not be dry. If pans are used for the pots, not more than from an eighth to a quarter of an inch of water should ever be in the pan. The surface soil should consist of rich mulching, and weak manure waterings should be given, especially after the Vines have broken and extended a couple of inches in length. Before breaking you may sprinkle the Vines twice or thrice a-day, but we have frequently broken Vines well without syringing them, merely by keeping a rather damp atmosphere. As to syringes, those having a round ball as a valve are the simplest and best.

Various (*Idem*).—We have no doubt that by having 2 or 3 inches on each side of the fire-bars, your fire will keep longer in. We have no faith in earthenware pipes for flues, unless there is a piece next the furnace of brick. Portland cement flues answer well, as Mr. Robson testifies, and we have seen them at Linton. We should consider one of the smallest-sized saddle or conical boilers ample for your place—say, if a saddle-back, 14 inches high, 14 inches wide, and 20 inches long, setting the boiler on a row of firebricks above the bars, and having the space for the bars from 9 to 10 inches wide; the boiler to be set as stated in answer to "T. N." to-day. Such a boiler would cost without fittings about 50*s.*, if of cast iron A cylinder cast iron boiler 18 inches high and 15 in diameter would cost about the same. There would be little to choose between them, but were we managing them ourselves, we could more easily make the saddle-back consume its own smoke.

Mushrooms in a Cellar (*J. F.*).—You can hardly have better advice than is contained in the article referred to at page 461, No. 497. It does not matter what the cellar is made of—rock, stone, or brick, or if it is even a dry place underground. The great advantage in all is the uniform heat. Your dry brick cellar will answer exceedingly well. If you have plenty of horse droppings, mixing with turfy loam in the proportions stated will be an advantage, but you can do without the loam if you cannot easily obtain it, only you must put on smaller layers at a time, and wait a little longer for spawning. The droppings from many horses, or from different stables, will be better than having to save material from one or two horses. Watering in winter will not be much needed, but when wanted we would use water at about 75°. In summer, to prevent any check, the water should be from 65° to 70° at lowest. Covering the beds with a little old hay will keep them more uniform in temperature and moisture in winter. It would not be needed in summer unless there were draughts through the cellar. In this case a covering would be an advantage.

Setting a Conical Boiler (*T. N.*).—We would never think of setting a conical boiler with a solid wall round it. We think the best plan is to place it at the height of one firebrick above the grate bars, and then leave a space of from 3 to 3½ inches round it, blocking the outlet from the top of the boiler inside, so that the smoke, flame, and heated air should go round the outside of the boiler before reaching the chimney. Setting your boiler on three firebricks on edge with an open space all round, would be better than with a solid wall next to the boiler, but on the whole we do not consider it to be so good as the above plan, though we have several times found it work well. All boilers, unless the bulk is inside a house, will lose heat unless surrounded by brickwork, but having a flue as above between the brickwork and boiler. If beyond that brickwork forming the flue there were another space, say 3 inches wide, for confined air, the heated bricks would tell on the boiler, and but little heat would extend to the brickwork beyond. In all such small boilers, however, after the heat has become strong, the continuance of heat with little fuel will depend on the careful use of the damper and ashpit door. Your 38-feet distance, where the small pipes connect the two houses out of doors, will also lose much heat unless these pipes be secured in a non-conducting medium, as dry sawdust, &c. The Lapageria rosea, being a strong plant, will succeed well planted out in the conservatory, if the place is well drained, room given for surface rather than deep rooting, and plenty of water without stagnation.

Names of Plants (*M. X. W.*).—2, Scolopendrium vulgare; 3, Selaginella Willdenovii; 4, Phymatodes vulgaris; 5, Pteris serrulata; 6, Adiantum hispidulum; 7, Saxifraga Fortunei. (*M. R.*).—1. Cyrtomium falcatum; 2, Nephrolepis tuberosa; 3, Onoclea sensibilis; 4, Scolopendrium vulgare.

POULTRY, BEE, AND PIGEON CHRONICLE.

RESULTS OF POULTRY-KEEPING.

According to your wish I send you a few particulars of my poultry-keeping. I had, hatched in April last year, twelve pullets and two cockerels (Golden-pencilled Hamburghs); the first pullet laid on October 23rd.

		No. of Eggs.
October	29th	7
November	5th	9
"	12th	13
"	19th	10
"	26th	13
December	3rd	20
"	10th	22
Carried forward		94

		No. of Eggs.
Brought forward		94
December	17th	19
"	24th	28
"	31st	34
January	7th	29
"	14th	28
		232

Two hundred and thirty-two eggs at nine a-shilling amount to nearly £1 6*s.* I obtained rather more, having sold some at 1½*d.* each, the remainder at nine a-shilling. I fed my fowls on peas at 1*d.* a-pound, and damaged wheat at 6*s.* a-measure (75 lbs.).

		s.	*d.*
Allowance per week,	6 lbs. of peas	0	6
"	12 lbs. of wheat	1	0
		1	6

You will remember a controversy in your Journal in 1861, when "E. C. C." disputed "Leighton's" statements, and perhaps there will be many who will say my fowls are not well fed; but I imagine their laying all through this frost, when neither grass nor grit was to be had, will prove the contrary. I calculate the cost of my fowls at about 2*s.* 6*d.* a-head to the time of their commencing laying.

	£	*s.*	*d.*
Eggs sold	1	6	0
Twelve weeks' Keep at 1*s.* 6*d.*	0	18	0
Profit	0	8	0

This may seem a small profit, but I can hear of no one having eggs; in fact, I am selling to people keeping four times the number of fowl I have, and they say they have not had an egg for four months. Perhaps your answer to "A. M." applies to me, and my success is attributable to hatching in April.—R. Wilson, *Wharf House, Ellesmere.*

[Save your March and April pullets by all means. They will put you in the satisfactory position you have occupied this year as regards eggs, but it is a pity to kill birds that have done so well, when they are only a year old. Sell them alive, or keep some of them to come in as layers when the pullets slacken next year. It is not all to have eggs in the winter; you should, and you can, manage to have them all the year round. —Eds.]

OUTRAGES ON PRIZE POULTRY.

The case of malicious mischief related by Mr. Cresswell is by no means a solitary instance of the risk our valuable poultry have to run during their journeyings to the various shows. I have now to relate a piece of villainy of a similar or, perhaps, even worse description. On the 13th of January I sent off my entries to the Aberdeen Show; among them were two valuable Game cocks, both having won me cups

at two of our principal shows. I naturally enough expected some notice would be taken of them by the Judges in giving their awards, but not even a commendation did they obtain, and why I could not surmise until their return home, when, to my horror and disgust, I found my best bird deprived of a portion of his tail and the longest flight feathers of one wing. The other bird was also mutilated in feather, but not to the same extent. It is evident that the mischief was done at the Show, for I have received a letter from a member of the Northern Poultry Club, in which, after offering me his sympathy, he states that my first bird which was penned he considered as likely a one as in the class, but on returning to this pen a few minutes later he found my bird had made a *partial moult*, and a party not far distant looking over the newly-arrived hampers, who, on being questioned, said he was looking for my other Game cock. Now how this party knew that I had more than one, or even one bird entered, is a mystery to me, unless he is a member of committee or had access to the Society's books, and it is a still greater mystery why no effort has been made to bring any suspicious party to justice.

Like Mr. Cresswell, I am prevented showing my bird for this season, besides being discomfited at the sight of a valuable bird suffering from the proceedings of one who must be depraved in the extreme, and free from all feeling and humanity.—J. W. Will, *Errol*.

WISBECH POULTRY, PIGEON, CANARY, AND RABBIT SHOW.

This, which I think was the first Exhibition of the kind held at Wisbech, took place on Wednesday and Thursday last, in the Public Hall, and was in every respect a signal success. Sometimes it requires a long time to popularise a poultry or a bird show. In some towns they take root at once and become recognised institutions, whilst in others they have to make a struggle for existence, and not unfrequently die-out from lack of support. It matters not how intrinsically excellent any exhibition may be if the taste of the public outside lie in another direction; and it is quite possible for a penny gaff, where may be seen "The Enchanted Stocking, hor the Blood-stained Bed-screw, followed by the Arlequin Dogs'-meat Man, hor Love in a Hiceberg," to reap a harvest in the same town where really interesting and instructive exhibitions can scarcely glean sufficient to pay rent and gas. Such does not appear to be the case at Wisbech, judging from the large attendance at the Show last week. It is under energetic, and what is better still, intelligent management, and I can congratulate the Canary fancy on one more fixture which is prepared to issue a good schedule, and which is under the supervision of a gentlemanly executive. The Hall was prettily decorated, with evergreens in pots interspersed here and there. It has frequently occurred to me, that in localities where the material is plentiful, a bird show combined with a winter garden or winter flower show would prove very attractive. Certainly it ought, and if good taste were exercised in the grouping of the plants and birds, a very charming spectacle might be produced.

The *Canaries* were placed on a stage draped with crimson, were well arranged and set in a good light, and though not so numerous as at other shows, contained more *bonâ fide* show birds than I have met with anywhere in proportion to the number staged. The Clear Yellow Norwich was an excellent class, Messrs. Cockle & Watson winning easily with a gem of a Jonque, a performance they repeated in the Clear Buffs; Moore & Wynn being second in each class. In Variegated Jonques Mr. Hawman's bird was first, though slightly deficient of a few minor feathers on one wing; but at this advanced stage of the season, birds which have been frequently shown, and, consequently, frequently in the tub, may be expected to be in not quite such faultless trim as some which have been kept back and laid-up in lavender. I think there is all the difference in the world between accidental loss and fraudulent trimming. Cockle & Watson were second with a grand heavily-marked bird, and also showed two splendid unevenly-marked birds in the Buffs, in which class Moore & Wynn were first and second. Mr. Hawman's bird was first in Crested Yellows, but it is taxing the discretionary power of a judge too much to send such a really good bird to a show in so dirty a condition. Both this class and the Crested Buffs were of extra quality. Lizards were remarkably fine, Mr. Harrison, and Cockle & Watson being the prizetakers with specimens of great merit. Mules were only moderate, the first-prize bird having some pretensions to quality, but the remainder only very so-so, too heavily and irregularly marked to have any chance with good-class birds. There are Mules and there are Mules. Cages of six were excellent, Cockle & Watson being first and second with six Jonques and six Mealies, very nice level birds. Messrs. Cockle & Watson made a gallant fight throughout, and it is something to lower the colours of such tried veterans as Moore & Wynn in the Clear Norwich classes. This, perhaps, would not have been the case if the Northampton firm had not suffered the loss at Ipswich which was announced in the advertising columns of the Journal. They had received an anonymous letter (I believe it was anonymous, a cowardly proceeding at best), to say they would see their stolen birds at Wisbech, and Mr. Wynne was at the Show on the *qui vive*. The so-called "stolen birds" to be seen at Wisbech, were the Clear Jonque and Clear Buff shown by Messrs. Cockle & Watson. Mr. Cockle was fortunately present and gave Mr. Wynn such thoroughly satisfactory evidence as to how and when he became possessed of them, as at once to clear up the matter and remove any impression as to the identity of the birds. I, too, have since received an anonymous letter on the subject, containing a most unworthy attempt to fix the stigma of direct theft on Messrs. Cockle & Watson, a fac-simile of which I enclose with these notes to the Editors of the Journal, with permission to publish it if they think it can answer any good purpose. But as the affair assumes very much the character of a libel, and may result in legal proceedings, the curiosity of the fancy may not be satisfied for a while. I will just add, that my anonymous correspondent hopes I will "tell all about it in the Journal," I have complied with his wish, and have placed his post card in Messrs. Cockle & Watson's hands.

I suppose this will be the last Show of the season which I shall report, for I have been obliged, with many regrets, to decline Carlisle, and I am afraid I shall not see the Palace Show this year. I am rather restless, but the moon is on the wane, and by the close of the week I hope to be in a resigned frame of mind. However (*balsamic word*), if I *should* be there ——— that dash indicates a spasm—and it will be on Saturday only, or not at all—any inquiries for "W. A. B." must be kindly made at the Secretary's table.—W. A. Blakston.

Dorkings.—1 and 2, G. Clarke, Long Sutton. *hc*, G. Cockle jun., Terrington St. John; J. Yates (2) Wisbech.

Bantams.—1, W. Adams, Ipswich. 2, S. S. Mossop, Long Sutton. *hc*, J. Blott, King's Lynn; Rev. F. Tearle, Gazely Vicarage, Newmarket. *c*, J. Blott; F. Lyon; T. Rogers, Walsall; E. Derry, Gedney; A. Stonar, Peterborough; T. Fenn.

Game.—1, H. E. Martin, Sculthorpe. 2, H. Snushall, Fleet Hargate, Wisbech. *hc*, W. Adams; H. E. Martin.. *c*, H. Snushall.

Cochins.—1, T. Rogers. 2, S. S. Mossop. *hc*, W. Boon. *c*, Mrs. Hines, Leverington.

Any other Variety.—1, T. Rogers. 2, Rev. W. H. James, Holbeach, Hurn. *hc*, W. Woodhouse, West Winch; Rev. W. H. James; Rev. A. Brook, Holbeach; W. K. Patrick (3) West Winch; Mrs. G. Phillips; C. W. Gibbs; S. Snarey, Wisbech; W. Catlack, jun. *c*, Mrs. Green, Leverington; Miss Hill, Wisbech; F. J. Bret, Downham.

Ducks.—1, Mrs. W. Ingram. 2, G. Cockle, jun.

Geese.—1 and 2, G. Cockle, jun.

Turkeys.—1, E. E. Derry. 2, M. Kew, Market Overton,

PIGEONS.

Carriers.—1, L. Wren, Lowestoft. 2, R. Payling, Peterborough. *hc*, A. Stonar.

Pouters.—1, R. Payling. 2, W. Woodhouse.

Tumblers.—1 and 2, W. Woodhouse. *hc*, H. Cox, Wisbech. *c*, Misses E. and A. Wren.

Runts.—1, H. Boyer.

Barbs.—1 and 2, J. Blott

Dragoons.—1, A. W. Wren. 2, J. E. Crofts, Blyth.

Any other Variety.—1, H. Snushall (Hyacinths). 2, T. C. Marshall (Magpies). *c*, F. N. Taylor, Leverington (Turbits); J. E. Crofts (Black Magpies); J. Simmons, Wisbech (Trumpeters); R. Payling (Yellow Turbits).

Rabbits.—1, J. Priestly, Long Sutton (Lop-eared Fawn Buck). 2, J. Bree, New Walsoken. *c*, W. T. Streader, Wisbech (Doe); H. Tuck; A. Langley, Downham Market (Fawn Doe); J. Priestly (Lop-eared Yellow Doe).

CAGE BIRDS.

Norwich.—*Clear Yellow.*—1, Cockle & Watson, Terrington St. John. 2, Moore and Wynn, Northampton. *vhc*, Cockle & Watson; Moore & Wynn; W. Cooke, Norwich. *hc*, T. Fenn, Ipswich (3). *c*, T. Irons, Northampton. *Clear Buff.*—1, Cockle & Watson. 2, Moore & Wynn. *hc*, W. Cooke (2); T. Fenn (2). *c*, T. Irons; Moore & Wynn.

Evenly Marked or Variegated Yellow.—1, R. Hawman, Middlesbrough. 2, Cockle & Watson. *vhc*, Moore & Wynn (2). *hc*, Cockle & Watson. *c*, T. Fenn (2).

Evenly Marked or Variegated Buff.—1 and 2, Moore & Wynn. *vhc*, Cockle & Watson (2). *c*, T. Irons; W. Cooke.

Crested.—*Yellow.*—1, R. Hawman. 2, Moore & Wynn. *vhc*, T. Fenn. *c*, T. Irons; Cockle & Watson; Moore & Wynn; T. Fenn. *Buff.*—1, Moore & Wynn. 2, Cockle & Watson. *vhc*, Moore & Wynn. *hc*, T. Fenn (2).

Green.—1, Mrs. Bothamley, Wisbech. 2, Moore & Wynn. *vhc*, Cockle and Watson; T. Fenn.

Jonque Cinnamon.—1 and 2, T. Irons. *c*, Cockle & Watson.

Buff Cinnamon.—1, Moore & Wynn. 2, T. Irons. *vhc*, T. Irons; Moore and Wynn.

Lizard.—*Golden-spangled.*—1, Cockle & Watson. 2, J. N. Harrison, Belper. *vhc*, R. Hawman; Cockle & Watson. *c*, S. Benn, Lynn. *Silver-spangled.*—1, J. N. Harrison. 2, Cockle & Watson. *vhc*, R. Hawman; Cockle & Watson. *hc*, J. Cuthbertson, Lynn.

Cage of Six Canaries.—1 and 2, Cockle & Watson. *c*, Cockle & Watson; Miss Upwood, Terrington St. Clements.

Goldfinch or Linnet Mule.—1, H. J. Ims, Bloomsbury, London (Goldfinch Mule). 2, T. Fenn (Yellow). *hc*, H. J. Ims (Goldfinch Mule); T. Fenn (Buff).

Goldfinch.—1, J. N. Harrison. 2, Miss Upwood. *c*, J. T. Manerief, Wisbech.

Bullfinch.—1 and 2, Cockle & Watson.

Parrot.—1, W. Sharred. 2, Mrs. Blake. *c*, H. Smith; T. F. Parker; W. Newman; S. Snarey.

Judges.—*Poultry:* Mr. W. B. Tegetmeier, London. *Singing Birds:* Mr. W. A. Blakston, Sunderland.

WOLVERHAMPTON POULTRY SHOW.

This Show was noquestionably good, and most probably, all things considered, the best that has yet taken place at Wolverhampton, though the arrangements in the limited space of the Agricultural Hall necessitated a double tier of poultry in all cases instead of a single one, a circumstance which detracted considerably from the beauty and easy inspection of the various classes.

The *Dorking* cock class stood first on the list, but these birds as a whole were not by any means of equal quality to such as have competed at the previous Wolverhampton annual meetings, most of them showing great want of condition. The hens were decidedly a better class throughout, the first-prize being a grand pen, well shown, of single-combed dark-feathered birds; the second a rosy-combed pen, equally praiseworthy, had not one of the hens been loose-combed. In fact, the latter were the larger of the two in point of frame. The third-prize pen, belonging to the Rev. E. Bartrum, was also of good character. Decidedly in all varieties the *Cochins* shown at Wolverhampton this season quite outvied those ever yet exhibited in the locality, being admirable as a class. The unusually good quality of the hens throughout was a common remark of fanciers of these breeds; no doubt the

greater advance in the season caused most of the adult hens to exhibit in far better condition than at late meetings. Some excellent Dark *Brahmas* were shown, the hens again having the superiority as to general condition. *Houdans*, almost unknown hitherto at this Show, were very good, and in excellent feather. The *Crève-Cœurs* were decidedly better than we have seen for some time past, great care being now taken in the selection of brood stock, so as to produce the square well-knit bird, so much prized on the table. The *Spanish* classes have been always well filled at the Wolverhampton Show, and were not less so this season; the havoc the late severe frost has made with the combs and constitution of the various otherwise capital specimens competing this year, was, however, painfully apparent. In *Game* fowls most of our best breeders competed; Messrs. Chaloner, Dyas, Fletcher, Laming, Matthew, and various others sending first-rate pens. Mr. Matthew took both first prizes for pairs of Game, and Mr. Fletcher the first prize and silver cup for the best pen of Game, with a Black Red hen. The *Hamburghs* throughout were superior to those hitherto shown at Wolverhampton, the Spangled being the better represented. Game *Bantams* were evidently mostly the worse for over-exhibition, a few really good pens being sent in so bad a state of health that success was hopeless. The cup pen of White Bantams was better than most of those recently shown; but perhaps the greatest novelty and curiosity in the whole collection was Mr. W. W. Boulton's new variety of Cuckoo Bantams. They were veritable Bantams, and of the most perfect Cuckoo colour imaginable. In the Variety class, La Flèche were first, Golden Polands second, and Malays third. Out of an entry in this class of sixteen pens, all present, only four pens remained unnoticed. The largest classes in the Show were the Selling classes, and many of these entries were really good, being even far superior to those of the usual classes, consequently the sales were very general.

Turkeys, *Geese*, and *Ducks* were all good, in fact, at our largest shows it is not customary to meet with anything better. In the variety Duck class, Mandarins were the first-prizetakers, and Pintails second; Carolinas, Mandarins, and Buenos Ayrean Ducks of first-rate quality being compelled to submit to no higher position than a highly commended. Mr. J. Dixon, of Bradford, and Mr. E. Hewitt, of Birmingham, officiated conjointly as Judges of Poultry; the Pigeon prizes being awarded by Mr. W. B. Tegetmeier, of London.

Dorkings.—*Cocks.*—1, G. Whitcombe, Gloucester. 2, Hon. J. Massy, Husbands Bosworth. 3, J. L. Lowndes, Hartwell. *Hens.*—1, G. Whitcombe. 2, Hon. H. Fitzwilliam, Wentworth Woodhouse. 3, Rev. E. Bartrum, Great Berkhamstead. *hc*, Miss F. A. Meek, Balcombe; J. Watts, King's Heath, Birmingham; G. Clarke, jun., Long Sutton. *c*, J. Horton, jun., Shirley.

Cochin-China (Cinnamon and Buff).—*Cocks.*—1, J. Watts. 2, H. Lloyd, jun., Handsworth. 3, J. Sichel, Timperley. *hc*, W. A. Burnell, Southwell; W. A. Taylor, Manchester (2); R. Dawson, Beverley. *c*, Earl of Bradford, Weston; Lady E. Moreton, Tortworth Court; E. Thomas, Didsbury. *Hens.*—1, W. A. Taylor. 2, Mrs. Wilkin, Bootle, Carnforth. 3, J. Watts. *hc*, W. A. Burnell; J. H. Dawes, Moseley; W. A. Taylor; A. Darby; J. Sichel. *c*, W. Masland, Milverton.

Cochin-China (Brown and Partridge).—*Cock.*—1, G. Lamb, Compton. 2, W. A. Taylor. 3, J. White, Whitley. *hc*, E. Tudman, Whitchurch; Rev. R. L. Story, Lockington; E. Tudman. *Hens.*—1, W. A. Taylor. 2, E. Tudman. 3, G. Lamb. *hc*, J. Stephens, Walsall; R. B. Wood, Uttoxeter; W. A. Taylor; E. Tudman.

Cochin-China (White).—1, J. Sichel. 2, R. Brown, Cheadle Hulme. 3, R. Chase, Birmingham. *hc*, Mrs. Waddell, West Derby; C. F. Herrieff, Banbury; J. Sichel.

Brahmas (Dark).—*Cocks.*—1, Rev. E. Alder, Etwall. 2, J. Robinson, Garstang. 3, G. A. Stephens, Dublin. *hc*, G. Bradford, Hanley; G. F. Whitehouse, King's Heath; Lady E. Moreton; J. Hill, Brentwood; O. E. Cresswell, Feltham; H. B. Morrell, Clyro; J. Sichel; J. Watts. *Hens.*—1 and Cup, G. E. Gettins. 2, T. F. Ansdell, St. Helens. 3, Dr. Holmes, Chesterfield. *hc*, Lady E. Moreton; H. B. Morrell (2); G. Bradford, Hanley; C. Taylor, Gloucester. *c*, R. Bailey, Etwall; J. H. Pickles, Southport.

Brahmas (Light).—1, D. Causer, Erdington. 2, A. O. Worthington, Burton. 3, Rev. N. J. Ridley, Newbury. *hc*, T. A. Dean, Moreton-on-Lugg; F. Crock, Forest Hill. *c*, J. R. Rodbard, Bristol; W. T. Storer, Brewood; T. A. Dean.

Houdans.—*Cock.*—1 and 3, R. B. Wood. 2, Mrs. J. Cross, Appleby, Brigg. *hc*, Hon. J. Massy. *c*, F. Bennett, Shiffnal. *Hens*—1, R. W. Wood. 2, R. B. Wood. 3, Hills & Co., Brighton. *hc*, J. Drewry, Burton-on-Trent.

Crève-Cœur.—*Cock.*—1 and Cup, Mrs. J. Cross. 2, J. Sichel. 3, H. Beldon. *hc*, Mrs. E. Williams, Berriew; C. Morris, Grassendale; Rev. N. J. Ridley; C. H. Smith, Radcliffe-on-Trent. *Hens.*—1, J. K. Fowler. 2, C. Morris. 3, J. Sichel. *hc*, Hon. H. Fitzwilliam; H. Beldon.

Spanish.—1, E. Jackson, Finchfield. 2, J. Walker, Wolverhampton. 3, H. F. Cooper, Walsall. *hc*, J. F. Sillitoe, Wolverhampton (2); J. Walker; R. Davies, Chester; M. Egginton, Wolverhampton; E. Jackson; H. Beldon.

Game.—*Black or Brown Red.—Cocks.*—1, S. Matthew. 2, W. M. Sowerbutts, Nantwich. 3, C. Chaloner, Steetly. *hc*, Hon. and Rev. F. Dutton, Burford; C. Chaloner; J. Mason, Worcester (Black Red); W. E. Oakeley, Atherstone (2); W. H. Cooke, Worcester (Black); A. B. Dyas, Madeley; E. C. Gilbert, Penkridge. *Any Variety except Black or Brown Reds.—Cocks.*—1, S. Matthew (Duckwing). 2, Master W. Fletcher, Stoneclough (Duckwing). 3, J. Laming, Spalding (Duckwing). *hc*, C. Chaloner (2); E. Bell, Burton (Duckwing); W. J. Cope, Barnsley (Duckwing); J. Mitchell, Moseley (Duckwing); W. Dunning, Newport (Duckwing); J. Laming (Duckwing). *Any Variety.—Hens.*—1 and Cup, W. Fletcher. 2, C. Chaloner. 3, J. Laming (Black Red). *hc*, E. Beß; S. Matthew; W. E. Oakeley; W. Dunning. *c*, W. H. Cooke (Black Red); J. Laming.

Hamburghs (Gold or Silver-spangled).—*Cocks.*—1, H. Beldon. 2, J. Buckley, Ashton-under-Lyne. 3, T. Boulton (Gold). *hc*, T. M. Derry, Gidney (Silver); Rev. W. Sergeantson (Silver); T. Blakeman, Tettenhall (Gold); T. Boulton (Gold); G. F. Whitehouse, King's Heath (Gold). *c*, T. Boulton (Gold). *Hens.*—1 and Cup, H. Beldon. 2, N. Marlor, Denton (Gold). 3, J. Buckley (Gold).

Hamburghs (Gold or Silver-pencilled).—*Cocks.*—1, J. H. Arnold, Moseley (Gold). 2, H. Pickles, Earby. 3, W. M. Mann, Kendal (Silver). *hc*, H. Beldon. *Hens.*—1, W. M. Mann (Silver-pencilled). 2, H. Pickles, jun., Earby. 3, H. Beldon.

Hamburghs (Black).—1 and 3, T. Walker, jun. 2, Rev. W. Sergeantson. *hc*, R. Bailey; W. A. Taylor.

Bantams.—*Game.*—1, E. Cambridge, Bristol. 2, R. Swift, Southwell. 3, C. Chaloner. *hc*, H. Coley, jun., Neachley Hall; J. Watts; Master Swindell, Oldswinford. *White. Clean-legged.*—1 and Cup, S. & R. Ashton. 2, H. Beldon. 3, Rev. F. Tearle, Gazeley. *hc*, Lady E. Moreton; S. & R. Ashton. *c*, J. Watts; S. & R. Ashton. *Any variety except Game and White.*—1, W. W. Boulton, Beverley (Cuckoo Bantams). 2, E. Cambridge (Black). 3, M. Leno, Dunstable (Laced). *hc*, J. Sichel; H. Beldon; Mrs. A. Woodcock, Leicester (Japanese); H. Draycott, Humberstone (Japanese). *c*, H. Pickles, jun. (Black); Bell and Thorpe, Stratford-on-Avon (Black); J. Watts (Silver-laced); Rev. G. F. Hodson, Bridgwater; W. W. Boulton (Cuckoo Bantams).

Any other Variety.—1, Hon. C. Fitzwilliam (La Flèche). 2, T. Dean, Keighley (Polands). 3, W. B. Payne, Shrewsbury (Malay). *hc*, G. A. Stephens, Dublin; Rev. A. G. Brooke, Shrawardine (Malay); W. Silvester, Sheffield (Gold Polands); H. Beldon; Rev. N. J. Ridley (White Leghorns); J. Watts (Sultans); Miss C. E. Palmer, Lighthorne, Warwick (Scotch Dumpies); W. A. Taylor (Cuckoo Cochins). *c*, Rev. G. F. Hodson (Malay).

Selling Class.—*Cocks.*—1, R. Chase (White Cochin). 2, H. Yardley, Birmingham. 3, C. Morris (Crève-Cœur). *hc*, L. Poynton, Congleton (Dark Brahma); W. A. Burnell (Buff Cochin); J. Lord (Buff Cochin); W. Swann, Erdington (Buff Cochin); J. R. Rodbard (Spanish); J. Mansell, Longton (Spanish); W. H. L. Clare, Twycross (Duckwing); Capt. W. G. Webb, Elford (Black Game); W. J. Cope (Game) (2); W. E. Oakeley (Black Reds); W. Speakman, Nantwich (Gold Hamburghs); F. Bennett, Shiffnal (Black Hamburghs); R. M. Lord (Dark Brahma); Mrs. A. Williamson (Light Brahma and White Cochin); Hon. J. Massy (Houdan); J. H. Brodwell (Dorking); J. Forsyth, Tettenhall (Black Red); J. Watts; W. Gamon, Chester. *c*, Rev. N. J. Ridley (Crève-Cœur); D. Lane, Hardwick (Houdan); W. A. Taylor; J. L. Lowndes (Dorking). *Hens.*—1, J. Sichel (Olive Cochin). 2, T. Sherratt, Knypersley (Dark Brahmas). 3, H. Bagshawe, Uttoxeter. *hc*, F. Bennett (Black Hamburgh); W. Birch, Barnacle (Black Hamburghs); J. Palmer, Longford (Brown and Partridge Cochins); C. Morriss (Crève-Cœur); W. E. Oakeley (Black Reds); J. Forsyth (Black Reds); J. Clews, Walsall (Spanish); E. Jackson, Finchfield; J. Watts (2); H. Yardley (2). *c*, W. A. Taylor; W. A. Burnell (Buff Cochins); W. Masland (Cochins); T. M. Derry (Buff Cochins); G. Newdegate (Game Piles); J. Bishop, Eyton; R. M. Lord (Dark Brahmas); F. Bennett (Dark Brahmas); J. Robinson, Garstang.

Turkeys.—1, Rev. N. J. Ridley. 2, J. Watts. *hc*, Earl of Bradford; F. E. Richardson; C. F. Clark, Perton.

Geese.—1, Rev. G. Hustler, Stillingfleet. 2, J. Watts. *hc*, R. Beckett, Hartford; J. K. Fowler; S. H. Stott, Rochdale.

Ducks.—*Aylesbury.*—1 and 2, J. K. Fowler. *c*, J. Williams, Walk-upon-Dearne. *Rouen.*—1, J. K. Fowler. 2, W. Gamon. *hc*, C. F. Clark; Miss Davies, Chester; J. White; R. Heigh, Himley; J. White; S. H. Stott. *Any other Variety.*—1, J. Watts (Mandarins). 2, Rev. W. Sergeantson, *hc*, M. Leno (Mandarins); S. and R. Ashton (Mandarins); J. E. Morriss, Elmsdale (Mandarins); G. S. Saimsbury, Devizes (Black East Indian); Rev. W. Sergeantson.

PIGEONS.

Tumblers.—1, H. Yardley. 2, J. Ford, London. *hc*, J. Ford; J. Wilson, Aston (2).

Carriers.—1, F. Smith, Birmingham. 2, H. Yardley. *hc*, F. Smith; W. H. Mitchell. *c*, J. Watts.

Pouters.—1 and 2, W. Gamon. *hc*, Mrs. Waddell, West Derby.

Fantails.—1, H. Yardley. 2, Rev. W. Sergeantson. *hc*, J. F. Loversidge, Newark (2).

Antwerps.—1, H. R. Wright, Hockley. 2, T. Morris, Wolverhampton. *hc*, H. Yardley (2); W. H. Mitchell; C. Langman, Bilston.

Dragoons.—1, W. H. Mitchell. 2, F. Graham, Birkenhead. *c*, Rev. H. J. Stokes, Grindon (2); H. Allsopp, Birmingham; J. Watts (2); F. Graham.

Jacobins.—1, W. E. Easten, Hull. 2, H. Yardley. *c*, C. F. Clark.

Nuns.—1, T. A. Dean, Moreton-on-Lugg. 2, S. A. Cooper, Walsall. *c*, F. Graham; W. E. Easten; H. Yardley.

Owls.—1, J. Fielding, jun., Rochdale. 2, H. Yardley. *hc*, J. Watts. *c*, S. A. Cooper.

Any other Variety.—1, F. Smith (Barbs). 2, S. A. Wyllie, East Moulsey (Runts). 3, J. Watts (Norwegian). *hc*, H. Yardley (2); T. J. Ford, Stourbridge; S. A. Wyllie, East Moulsey (Florentines).

NANTWICH POULTRY SHOW.

(*From Correspondents.*)

The eleventh annual Exhibition was held on the 3rd and 4th inst. in the Town Hall, a place well adapted for such an exhibition. The Secretary has a thoroughly good working Committee, and is well supported in the district, the Hall being filled with visiters. The only fault I have to find with the Society is that it restricts the competition to exhibitors residing within a radius of thirteen miles from Nantwich. When I asked the question, Why restrict your exhibitors to so confined a district, when you have birds fit to compete against the world? the reason given was, Our subscribers would not give anything if they thought there was a chance of its leaving the neighbourhood. Now this is penny wise and pound foolish, for at the Show just held, if exhibitors had been drawn from a distance the Society would have been benefited, and several of the exhibitors would have obtained many pounds for their birds, there being Game fowls entered here at £5 5*s.* each that would have been snapped up at once. This is a great loss; besides, when open, competition gives the inhabitants a chance to compare their improvements with those of other districts.

The Show might be almost called an exhibition of *Game*, and so good were the birds that I have not seen a collection like it since the great Liverpool Sweepstakes years. Commencing with a class for old birds of Black or Brown Reds, a Black Red had the cup; it was of most beautiful symmetry, with the real distinct orange hackle and saddle, and beautiful violet red shoulder coverts—one that ought to be sought after for a brood cock. Second came a Brown Red, nearly, if not quite, up to the standard, having a good, long, strong, snake head, and a dark-streaked breast, with the beautiful lemon-straw back and lemon saddle; shoulder coverts dark brown maroon. The third-prize bird was perfect in feather, his only fault being that he was not quite large enough. There are but few shows at which he would not have stood first, but the collection at Nantwich was so extraordinarily good that he had to be placed third. The next class was for stags of any colour, for the Society's silver cup. Here Brown Reds carried all before them, although there were some grand Black Reds and Duckwings, but the Judge had such a collection placed before him on a raised daïs, that he had to stand for some considerable time to admire them as a whole before he could bring himself to discard any, saying they all ought to have a cup, but he most reluctantly commenced to handle and tick off for points some of the finest cockerels shown this year. When, however, we consider this is the neighbourhood whence all our winning yards of late years have sprung, their excellence is not so surprising. The cup cockerel was of that grand type of which

a few examples were seen about fifteen years ago, but which has been a'most lost, owing to breeding with the Black Reds and Duckwings. A Brown Red has almost a standard for shape different from all other Game—much stronger in head and neck, large dark eye, thick from breast to back, broad, strong shoulders, with a width in front that is hardly admissible in other breeds of Game. In the cup bird we had all that was wanted—symmetry and colour to perfection; the second and third-prize birds were very little behind; indeed, there was a slight difference of opinion which ought to have been first out of the three. Many of the highly-commended birds were fit to win anywhere. Nantwich is the place I should recommend to all who want fresh blood in Brown Reds.

The class for adult Black Reds was hardly up to the mark, there being a want of colour and style; adult Brown Reds were good, the only fault being they were a little too heavy. Duckwings and Piles were not so good as I could have desired, most of the Duckwings being soft and loose in feather, with the exception of the first-prize bird, which had hard, short, good feathers, and colours beautifully blended. The Piles were not quite clear enough in their colours. Game hens and Black and Brown Reds were a most extraordinary collection. No class of hens at any other show during the past year has come near them. Black Reds, good in style and colour, were first; they were all we want—free from red on the wings, and without the least pencilling on the ends of their wings. The second and third prizes went to Brown Reds, fine in colour, with good black, bold eyes, and of excellent symmetry. Black Red cockerels were not up to the standard. Of Brown Red chickens (cockerel and pullet), the first, second, and third-prize birds would be treasures to any Brown Red breeder; all I can say is they were perfection in colours and of fine shape, leaving no room for improvement.

Turkeys were poor; of *Geese*, one pen was up to the mark; *Ducks* were poor; *Spanish* nowhere; *Dorkings*, *Cochins*, *Brahmas*, and *Hamburghs* miserable.

In the *Pigeons* there was a falling-off both in quantity and quality as compared with previous years. The supposed cause was that one exhibitor, as in former years, had borrowed, or was supposed to have borrowed, many birds from a dealer, and the presumed fact caused many fanciers to withhold their support, the Show being really confined to members and exhibiters within a radius of thirteen miles from the Town Hall. I trust if this assumed fact is correct numerous fanciers in the district will cause this assumption to be properly ventilated, and will again prove how creditably they can support the exertions of the Committee as in years of yore.

The *Cage Birds* were a show in themselves. *Rabbits* were only indifferent.

Spanish.—1, R. Hulse, Winsford. Equal 1, J. Siddorn, Over Lane.
Bantams.—1, W. Woolley, Bunbury. *Sweepstakes.*—1, A. Jackson. *Game.*—1, Miss Cawley. 2, R. Ashley. 3, Miss E. Church, Nantwich.
Dorkings.—1, W. B. Etches, Woodhouse.
Cochin-China.—1, J. G. Pearson, Drayton.
Brahma-Pootra.—1, J. Walker, Keele. 2, J. G. Pearson.
Game.—*Cock.*—Cup, R. Ashley. 2, Galley & Willett, Nantwich. 3, J. Platt, Swanlow. *Hen.*—1, J. Platt. 2, R. Ashley. Equal 2, Galley & Willett. *vhc*, G. F. Ward, Wrenbury. *hc*, J. Platt. *Cockerel.*—Cup, Galley & Willett. 2 and 3, W. Sowerbutts, Nantwich. *vhc*, R. Ashley (2). *hc*, T. Burgess, Burleydam. *Black Reds.*—1, T. Burgess. *Chickens.*—1, W. Miller, Wyburnbury. 2, R. Ashley. *Brown Reds.*—1, Galley & Willet. 2, T. Burgess. *Chickens.*—1, Galley and Willet. 2, R. Ashley. 3, T. Burgess. The whole class Very Highly Commended. *Any other Variety.*—1, J. Platt. 2 and *vhc*, R. Ashley. 3, J. Wilkinson, Norbury. *hc*, Miss Sadler, Whitchurch. *Sweepstake.*—1, G. F. Ward.
Hamburghs.—*Pencilled*—1, Mrs. Flyn, Hardingswood. 2, W. Speakman, Doddington. *Spangled.*—1, Mrs Flyn. 2, C. Steele, Crewe.
Selling Class.—1, G. F. Ward.
Turkeys.—1, Miss Roberts, Bunbury Rectory.
Geese.—1, Galley & Willett. 2, T. Whittington, Batherton.
Ducks.—*Aylesbury.*—1, Mrs. M. Hornby, Darnhall. *Rouen*—1, J. Platt. *Any other Variety.*—1, Rev. — Merideth, Burleydam.

Pigeons.—*Carriers.*—1, W. Woolley, Bunbury. 2, J. Chesters, Nantwich. *hc*, S. Cliff, Nantwich. *Dragoons.*—1 and *hc*, S. Cliff. 2, Messrs. Prince & Pass, Nantwich. *Pouters.*—1, J. Chesters. *Barbs.*—1 and 2, Messrs. Prince & Pass. *Tumblers.*—1 and 2, A. J. Boote, Weston. *Fantails.*—1 and *hc*, J. Chesters. 2, Messrs. Prince & Pass. *Jacobins.*—1 and 2, J. Chesters. *Trumpeters.*—1, A. J. Boote. 2, J. Chesters. *Nuns.*—2, J. Chesters. *Owls.*—1, E. S. Nixson, Nantwich. 2, Messrs. Prince & Pass. *Turbits.*—2, J. Chesters. *Any Variety.*—1, J. Chesters (Runts). 2, W. Woolley (Satinettes). *Doves.*—1, Miss J. H. Nixson, Nantwich. 2, J. Hockenhull, Nantwich. *Selling Class.*—1, A. J. Boote.

Singing Birds.—Canaries.—*Yellow.*—1 and 2, S. Williamson, Nantwich. *Buff.*—1 and 2, S. Williamson. *Crested.*—1 and 2, S. Williamson. *Norwich.*—1, S. Williamson. 2, H. Bowyer, Nantwich. *Any Variety.*—1, S. Williamson. Brown Linnets.—1, H. Timmis, Walgherton. 2, R. Williamson, Nantwich. Goldfinches.—1 and 2, S. Williamson. Skylarks.—1 and 2, R. Williamson. Bullfinches.—1, S. Williamson. 2, H. Timmis.

Rabbits.—1, Mrs. Forster, Nantwich, 11½ lbs. 2, F. P. Johnson, Nantwich, 10½ lbs.

Judges.—*Poultry:* Mr. Douglas, Clumber Park, Worksop; *Pigeons, Cage Birds, and Rabbits:* Mr. Ridpeth, Outwood Hall, Handforth.

Poultry Show at Northampton.—In order to encourage the Spanish and Dorking fanciers, I have opened subscription lists for two silver cups as extra prizes in the above classes. Any exhibiters or admirers of these breeds wishing to subscribe towards the cups will please forward their subscriptions to me as early as convenient.—F. Sabbage, 17, *Broad Street, Northampton.*

Balds and Beards.—Mr. W. J. Woodhouse says he will show a pen of his Baldheads and Beards at the National Peristeronic Society's Show, to be held at the Crystal Palace on the 14th of February, and will give to any person £50 sterling if he can show a pen like them for quality.

SELKIRK POULTRY SHOW.

At this Show, held on the 1st and 2nd inst., there were upwards of 250 entries of poultry and Pigeons. The awards were as follow:—

Spanish.—1 and Cup, D. Waugh, Melrose. 2, J. Oliver, Choppington New Row, Morpeth. 3, H. Wilkinson, Earby.
Dorkings.—1, D. Gellatly, Meigle. 2, J. Logan, Eastshield, Carnwath. 3, W. G. Mulligan, Springfield, Belfast. *Chickens.*—1, D. Gellatly, Meigle. 2, W. Reekie, Selkirk. 3, W. Bearpark, Ainderby Steeple. *hc*, Z. H. Heys, Barrhead.
Cochin-China.—1, R. Hime, Bedlington, Morpeth. 2, J. Pollock, Busby, Glasgow. 3, Com. G. F. Lyon, Kirkmichael, Dumfries. *hc*, W. Linton, Selkirk.
Brahma Pootra.—1, J. Cowman, Whitehaven. 2, W. Brownlee, Kirkcaldy. 3, Com. G. F. Lyon. *hc*, W. G. Mulligan; J. Cowman; Miss Drummond, Megginch Castle, Errol; D. Rutherford, Selkirk.
Hamburghs.—*Golden-pencilled.*—1, A. Pratt, Kirkcaldy. 2 and 3, W. R. Park, Abbotsmeadow, Melrose. *hc*, Lady M. Scott, Bowhill; J. Nicholson, jun., Carlisle; H. Pickles, jun. *c*, R. Blakeburn, Choppington New Row. *Silver-pencilled.*—1 and 2, H. Pickles, jun. 3, R. Blakeburn. *Golden-spangled.*—1, J. Ogden, Hollinwood. 2, A. Heatlie, Selkirk. 3, R. Dickson, Selkirk. *c*, H. Pickles, jun. *Silver-spangled.*—1 and Cup, Ashton & Booth, Broadbottom, Mottram. 2, W. R. Park, Melrose. 3, G. J. Campbell, New Pitsligo. *hc*, J. Nicholson, jun., Carlisle.
Game (Any variety).—1 and Cup, J. W. Will, Errol. 2, D. Hardie, Priesthaugh. 3, A. Ormiston, Kelso (Duckwings). *Chickens.*—1, A. Dewar, Linton, Cluny. 2, T. W. Mitchell, Perth. 3, W. Chalmers, Leslie. *hc*, J. Blair, Blairnigone, Dollar (Brown Red).
Game Bantams.—*Black or Brown Red.*—1, G. Hall, Kendal. 2, Z. H. Heys, Barrhead. 3, G. Todd, Sunderland. *hc*, D. Hardie (Black Red); H. Kirsopp, Bathgate (Black Red); W. Brownlee, Kirkcaldy (Black Red); A. C. Lang, Selkirk (Black Red). *c*, W. Goddard, Earlston (Black Red). *Any other Variety.*—1, J. Craw, Jedburgh (Duckwing). 2, Bellingham & Gill, Woodfield, Burnley. 3, J. Stable, Great Driffield (Pile). *hc*, W. Brownlee (Duckwing); Bellingham and Gill; G. Macmillan, Jedburgh (Pile). *c*, G. Stalker, West Sleekburn (Duckwing).
Bantams.—*Any other variety than Game.*—1, Master A. Frew, Sinclairtown (Pine Silver-laced). 2, T. C. Harrison, Hull. 3, J. Archibald, Earlston (Japanese). *hc*, H. Yardley, Birmingham (Gold-laced); H. Pickles, jun. (Black). *Any Variety.*—*Cock.*—1, Bellingham & Gill. 2, J. Ferry, Cowpen, Morpeth (Brown Red). 3, W. Scott, Jedburgh (Duckwing). *hc*, E. Douglas, Selkirk; W. Brown, Selkirk (Black Red).
Any other Variety.—1, W. R. Park (Crêve-Cœur) 2, T. Dean, Keighley, Yorkshire (Polands). 3, W. Bearpark (Silver Polands). *hc*, Z. H. Heys; G. Todd, Sunderland (Crêve-Cœur); H. Pickles, jun. (Polands); J. Logan (Houdans and Black Hamburghs).
Barndoor Fowls.—1, W. Reekie, Selkirk. 2, J. Scott, Newhall, Lilliesleaf. 3, Com. G. F. Lyon.
Ducks.—*Aylesbury.*—1, Com. G. F. Lyon. 2, D. Hardie. 3, J. Scott, Newhall. *hc*, R. Dickie, Burnside, Alva; A. Hoggart, Leslie; G. Dryden, Selkirk. *Rouen.*—1 and 3, D. Hardie. 2, W. G. Mulligan.
Cottagers' Class (Any variety).—1, D. Waugh, Melrose (Spanish). 2, J. Beattie, Selkirk (Brahma Pootra). 3, J. Laidlaw, Langholm (Spanish). *hc*, T. Brown, Melrose (Spanish); R. Hogg, Selkirk (Silver-spangled); T. Hogg, Selkirk (Silver-spangled); T. Smith, Selkirk (Golden-pencilled); W. Riddell, Selkirk (Dorking).
Selling Class.—1, W. Linton, Selkirk (Crêve-Cœur). 2, T. W. Mitchell, Perth (Brown Red Game). 3, D. Gellatly, Meigle (Dorking). *hc*, W. Grice, Bootle. *c*, J. Craw, Jedburgh (Duckwing).

PIGEONS.

Tumblers (Any variety).—1, A. Johnstone, Bathgate. 2, W. Goddard, Earlston (Almonds) *hc*, A. Fairbairn, Whitmuir, Selkirk.
Carriers.—2, H. Yardley. *hc*, M'Gill Skinner, Edinburgh.
Fantails.—1 and 2, A. Crosbie. *hc*, J. G. Spence, Edinburgh.
Pouters.—1 and Medal, M'Gill Skinner. 2, J. Fairley, Edinburgh.
Jacobins.—1, W. E. Easton, Hull. 2, H. Yardley. *hc*, J. G. Spence, Edinburgh; W. R. & H. O. Blenkinsop, Newcastle-on-Tyne.
Nuns.—1, W. E. Easton. 2, W. Bearpark. *hc*, T. Dickson, Selkirk.
Owls.—1, W. Goddard. 2, J. G. Spence. *hc*, A. Crosbie, Melrose; H. Yardley.
Turbits.—1, W. E. Easton. 2, Miss B. P. Frew, Kirkcaldy. *hc*, A. Crosbie.
Any other Variety.—1 and *c*, A. Crosbie (Letz and Black Trumpeters). 2, W. Goddard (Ice). *hc*, H. Yardley; A. Johnstone, Bathgate; W. Goddard, Earlston (Austrian Pouters); Miss R. C. Frew (Magpies).
Selling Class.—1, J. Simson, Fauldshope (Turbits). 2, M'Gill Skinner (Black Trumpeters). 3, W. R. & H. O. Blenkinsop. *hc*, W. Inglis, Selkirk (Red Pouters); A. Crosbie (Fantails). *c*, A. Johnstone (Fantails).

Judge.—Mr. Richard Teebay, Fulwood, Preston.

PRIZE LISTS FOR CARRIER PIGEONS.

Having until last autumn been absent from England for some years, I am surprised at the prize lists for Carriers not being so extensive, I may say, as they were. This is to be regretted, but more especially the system now in force, except at one or two large shows, of exhibiting in pairs. Now, every Carrier fancier knows this is a very difficult thing to accomplish, for I believe, as a rule, no fancier breeds from two Blacks or two Duns. There may be exceptions of course. Then, again, it does not follow that the two best show birds would be those you match to breed from, and you cannot risk the fight that will take place on putting odd birds unmated into the same pen. If committees cannot afford to increase the lists, why not divide the sum into prizes for single cocks and single hens, as with Pouters? I am sure that exhibiting in pairs deters many from showing. I should be glad if some of your readers would give their views on this point. My own idea is, that the pair-system does not tend to the advantage of either committees or exhibitors.—F. C. Hassard.

THE FANTAIL PIGEON.

In No. 502 there is an article on the Fantail Pigeon, which, after enumerating the many points good birds of this breed ought to possess, leaves out one of the most important, that of

size. As regards this, they cannot be too small; and I disagree with the writer as to their being hardy birds, as the finer the quality the more tender they are. As we are referred to the illustration, it is full of errors. The head is far too round, it ought to be long, and the neck about half the thickness at the part where the head is set on. As the body is in profile, and the tail more than three-quarter view, it is twisted—a grave fault in a Fantail. Taking it altogether, I should consider the bird figured exceedingly coarse, and of but little value. The number of feathers in the tail of a high-bred small Fantail seldom exceeds thirty-two. The shaking of the neck is a point, and is indispensable. Why should Blacks, Blues, and Silvers have pearl eyes, and Yellows and Reds be doubtful? What is right for one is right for the other, at least so says—PRIZETAKER.

UNITED KINGDOM RABBIT CLUB.

IN reference to the remarks made in your paper of January 26th by Mr. M. Millington, of York, the Nottingham Fancy Rabbit Society fully appreciates, and will be most happy in assisting to form, a "United Kingdom Rabbit Club," and to have a paid Secretary, to fix upon the different classes, likewise the number of prizes, and to correspond with each of the poultry show committees throughout the United Kingdom. We are confident of this, that if Rabbit fanciers were to unite throughout the United Kingdom it would put an end to all jealousy. I may also add, on behalf of the Nottingham Fancy Rabbit Society, that we shall be glad to co-operate in any scheme such as that suggested by Mr. Millington.—JOSEPH PARKER, *Secretary, Woodlark Inn, Nottingham.*

COLCHESTER AND PORTSMOUTH RABBIT PRIZES.

IN answer to Mr. Millington's observation, "I am surprised the fancy-variety men who have written so much upon the injustice done to the variety classes at most shows, should now praise the one-sided list from Colchester, where only £3 are offered for the Lops in one class, £9 going to the fancy varieties"—that is, Himalaya, Angora, and any other variety—I cannot see anything one-sided about this, but I consider it one-sided when about five times as great a sum is offered to one breed as to another, as at York and Portsmouth. There are about six distinct breeds of the fancy kinds that are shown, and to compare them as *one* class to the Lops is quite unreasonable.

Mr. Millington looks at the value of the Lops, but Committees do not—they generally put the classes as they think they will pay best. Now, at the York Show, of which Mr. Millington was a judge and manager, they offered to the Lops the sum of £17 10*s.* in five classes, and had forty-five entries at 2*s.* each, making £4 10*s.* To the ill-used fancy varieties they only offered £4 15*s.* (calling the medal £1), in only three classes, and had forty-five entries, paying them £4 10*s.*, being within 5*s.* of the prizes offered.

I suppose the Colchester Committee have seen this, and because they have put the fancy kinds upon the same footing as the Lops, and they are praised for it, Mr. Millington calls us one-sided, and maintains that the prize-schedule of Portsmouth is the best. Now, at Portsmouth they have four or five classes for Lops—first prize, 15*s.*; second, 10*s.*; and two silver cups; entrance 2*s.* per pen. The varieties have to be content with a paltry prize of 10*s.*; entrance 2*s.*, just the same as for Lops, for which one breed about eight times the value of prizes is offered as to the six breeds of fancy varieties. Lastly, Mr. Millington says the Colchester Committee will find out their mistake when the entries close; to which I reply, we must wait till both shows are over and compare the entries.—JAS. BOYLE, JUN., *Blackburn.*

P.S.—A few words in answer to Mr. Millington's note on my Rabbit kindling after the York Show. Mine is not the only case; I have had letters from Mr. E. E. M. Royd and Mr. A. L. Rawstron, whose Rabbits kindled as did mine. Mr. Millington says, that I in "careful haste put both Rabbits together." I defy anyone to put two Rabbits in a compartment measuring 13 inches long, 6½ inches broad, and 8 inches deep, which are the dimensions of each of the four compartments in which the Himalayans were sent. I hear the fancy kinds have to be shown singly next year.—J. B.

SILVER CUPS AT THE CRYSTAL PALACE CANARY SHOW.

MR. STANSFIELD writes me that he is suffering from an attack of perpendicularity of the capillary tubes on the summit of his cranium consequent upon my call to him to "wire in." Let me assure him the symptoms are not very dangerous. My hair often stands on end, in fact it has a habit of doing so when what there is left of it looks in the glass and sees how the frost and snow have altered its colour. Speaking technically, I should say it has "run" very much. I have read his note incorrectly. The idea he wished to convey was, not that he had received one hundred subscriptions, but had about one hundred applications to make. Happy man! £3 3*s.* to raise among one hundred fanciers, all eager to contribute to the cup—exactly 7½*d.* and 6-25ths of a farthing each; say 1*s.* 3*d.*, and there will be a cup for the "Any other variety of Mule" also, a class which, I repeat, is to a naturalist one of the most remarkable in the Show. Mr. Bailey (Purfleet Bailey, not he of Thirsk), what are you about that you are not gleaning for a cup for the Foreign Bird classes? "Wire in," there is plenty of time.—W. A. BLAKSTON.

FOUL BROOD.

FROM reading in page 77 the article of your esteemed correspondent "R. S." I have been induced to make the following remarks. First, I have two hives which were supplied with dried combs taken from a foul-brood stock five and six years ago, which have given on an average 80 lbs. of comb annually from that time, and which are and have remained free from foul brood ever since. Notwithstanding the difference of opinion as to the cause of foul brood, we are all agreed that its consequences are fatal unless a speedy manipulation of the hive takes place, and that its fatal effects fall on the young larvæ. Now I may ask, What is the disease? Is it an epidemic caused by the inhalation of some disease-germ, or by inoculation, commencing externally, eating its way inwardly until the intestines are reached, thus causing death and corruption? Or is it caused by fungi and the germs of disease being equally spread in wax and honey, or by improper food acting in some way prejudicially to the larvæ? This last cause is in my opinion the most likely one—nay, in fact the effects point to this. If we examine the brood of a diseased hive we can at once recognise a marked difference in its appearance from that of a healthy stock, having a more corpulent appearance, and in many cases signs of flatulency; at all events the larvæ when under the microscope present the appearance of having suffered, if they possess that sense, as their internal organs are wasted away and look as if they had burst, whilst in healthy larvæ at the same stage these organs can all be completely traced. These experiments were, however, made for my own amusement, and no notes being taken at the time I cannot now explain them satisfactorily.

As to the question whether unsealed honey, or sealed and unsealed honey mixed, produce fermentation, this I answer in the positive; and on the same ground do I condemn the removal of unsealed combs from a hive and extracting honey with the centrifugal machine. In every case in which I have drained the honey from a diseased hive it has shown signs of more or less fermentation, and in every case where this honey has been given to bees it has produced disease.

In regard to the case described by "A RENFREWSHIRE BEE-KEEPER," and remarked on by "R. S.," I have noticed it often, and in some instances have observed the lid of the cell lifted off, and the mouldy substance showing round the edge. The practice of preserving such is by no means uncommon in this locality, but I regret to say where it is practised the apiary is more diseased than otherwise. With regard to weak hives mentioned by "R. S." as having dead bees in spring or autumn, any ill effects which may follow do not in my opinion arise in any way from the dead bees, but rather from what honey they contain having undergone a chemical change in the same manner as described by "A RENFREWSHIRE BEE-KEEPER."

I had a chat with an old bee-keeper of fifty years' standing, who maintained that the disease originated from not mixing whiskey with their food; so long as he knew this practised no disease was known. The cure of foul brood by medicine is, I think, difficult, but perhaps not impossible.—A LANARKSHIRE BEE-KEEPER.

OUR LETTER BOX.

BOOKS (*J. C.*).—"The Poultry-keepers' Manual" has coloured plates, price 5*s.* "The Poultry Book for the Many" is 6*d.* If you enclose sixty-six stamps with your address, and four extra for postage of the first, and one stamp for postage of the second, you can have both free by post from our office.

DORKING LAYING WITH DIFFICULTY (*C. M.*).—Do you mean three eggs per month or per week? She sits on the nest till she has laid her egg, and it is probable the roughness of the shell causes the difficulty in doing so; at any rate it is not a natural state. We advise you to give castor oil, a tablespoonful every other day, and to use Beily's pills. Give barley-meal or ground oats with the pickings and scraps. Discontinue maize-meal and buckwheat, both are too fattening.

BLACK BANTAM COCK'S TAIL (*Amateur*).—It is not an advantage for a Game Bantam cock to carry his tail erect, nor to be very full-feathered. The tail should be scanty of feathers, and be carried rather down than otherwise. We should prefer No. 1.

Marking Poultry (*Lemon Buff*).—You do not say whether you want a mark to be recognised only by yourself, or whether it may be visible to all. In the latter case nothing is better than a piece of coloured cloth sewn round the leg, different colours marking different broods. If it is to be a private mark, it may be on the beak or eyelid, or, easier still, marked with a red-hot iron in the web of the wing—thus, .. ∴ ∴ ⁖ : , and so on. Being made with a red-hot instrument the holes do not fill up, and are not to be seen unless they are looked for by some one who knows where they are.

Spanish Cocks' Faces (*Young Beginner*).—If the cock is suffering from a cauliflower face, as it is called, on account of its resemblance to that vegetable, the best thing we know of is powdered alum, as it penetrates into the cracks and dries them up. We know no work that treats of these points. The face will never heal till you are able to keep it dry; the weeping turns it brown wherever it touches.

Crossing Fowls for Table Use (*Irish Subscriber*).—If you wish for choice poultry, keep pure Dorkings. If you cross at all, cross with Brahmas, by putting a Brahma cock to Dorking hens. It is not well to put Houdans with Dorkings, because they are non-sitters. The Houdan is a better table fowl than the Brahma.

Breeding Turkeys (*H. F.*).—Turkeys, like all poultry, should lay on the ground. The hens begin laying from the middle of March to the end of April and later. It is of no use to keep a pair of Turkeys. Having satisfied yourself his services are no longer necessary, separate them. If you leave them together it is probable you will have no eggs, because he will kill the hen. It is an unwise thing to keep a cock unless you have several hens.

Dorking Pullets' Legs Paralysed (*Mrs. B*).—The pullet is probably suffering from an injury to the back, and it will be some time before she recovers. You need not keep her before the fire. Put her in a dry, covered place free from draught and damp, and supply her with Sussex meal and some sods of growing grass, cut with plenty of earth. The supply of eggs will depend on the age of the fowls. All the pullets will lay within a fortnight if they have passed the age of six months, excepting the Polands, they lay later. Brahma and Cochin pullets lay earlier than others. It is not in the nature of hens to lay in the winter.

Barrow Poultry Show.—In the class for Game cockerels, the cup was awarded to Mr. J. Mason, St. John's, Worcester.

Plymouth Poultry Show (*M. Deacon*).—Write to the Secretary again, and say that if the birds or the money be not sent to you within a week you will instruct your solicitor to proceed in the County Court for their recovery.

Malay Prizes at Northampton.—Mr. William Humphreys, 30, Newland, Northampton, Secretary to the Show, will be very pleased to receive contributions and devote the same to the object mentioned by the Rev. A. G. Brooke, and will duly advertise the special prize in this Journal if one be subscribed for before the entries close, March 1st.

Egg in Egg (*J. Palmer*).—This monstrosity frequently occurs.

Combs of Dorkings (*An Inquirer*).—The comb of a Dorking hen should fall over; that of a cock should be upright. It is a grave fault for it to turn even at the back. Eggs may be left with impunity during a day in summer, but if a hen deserts them in such weather as this for twelve hours,

"All the king's horses and all the king's men
Can't set Humpty Dumpty up again."

Brahma's Laying Intermitted (*C. W. L.*).—It is more than probable your fowls are egg-bound. Pull out a tail feather, dip it in oil till it is perfectly saturated, then pass it down the egg-passage till it meet the egg. It will give relief, and the hen will make an effort; do not attempt to assist her, but continue to lubricate the passage. Their food is too fattening; give ground oats slaked with water morning and evening, maize and barley alternately for the midday meal.

Incubator (*Dorking*),—We cannot give you any relative information. We never knew anyone who had purchased an incubator who did not find that the money was thrown away.

Fowls Hunchbacked (*G. B.*).—You are mistaken when you say your birds are of the purest strain, if by that you mean the best strain. If they have any pretension at all to breed, it goes back for some years, because although it is not uncommon for Hamburghs and Polands when they are in-bred to produce hunchbacked chickens, still they are the exceptions. If you have four all affected in that way, they are either hopelessly out-bred, or they are the drafts from some yard sadly in want of fresh blood. There is no cure for it, and it is always hereditary. You must not breed from them.

Dubbing (*Poussin*). — Apply to Messrs. Baily, 113, Mount Street, Grosvenor Square.

Hive for Taking Honey in Supers (*E. D.*).—Payne's improved cottage hive, described in pages 7 and 8 of the last edition of "Bee-keeping for the Many," but of somewhat larger dimensions, is cheap and will answer your purpose very well, as will also the Stewarton hive, manufactured by Mr. R. Eaglesham, Stewarton, Ayrshire. The Woodbury frame hive is the best adapted for scientific and experimental bee-keeping, and may be seen and bought at Messrs. Neighbours', 149, Regent Street, and 127, High Holborn, London.

Woodbury Hives (*W. O.*).—Apply to Messrs. Neighbour, Regent Street. "Bee-keeping" will suit you; you can have it free by post from our office if you enclose five post-office stamps with your address.

Rabbit Injured (*Anthony*).—Hold her by the hind legs and strike her at the back of the head, it deprives the animal of sensation instantly.

Treatment of Parrots (*Paterfamilias*).—As to food, cut stale bread in slices and pour warm water over it, let it soak awhile, squeeze it as dry as possible, then allow it to absorb as much fresh-boiled milk as it will without being very moist. This is the staple food; sometimes give biscuits treated in the same way. Indian corn is good, but must be boiled first and drained of the water; nuts occasionally, and fruit in season. Fill their pan with food. As to drink, give clean water, and in summer a bath, which, if they can be induced to take it, is a great benefit, and makes them look nicely. The constant pecking the feathers is owing to the bird having, or having had, bones given it. We have known Parrots pluck themselves entirely bare, as if for the spit, owing to meat and bones, which ought never to be given them, as they cause irritation of the skin and heat the bird. The bird is a vegetable-eater, not a meat-eater. If it were summer a slight sprinkling of tepid water from a fine watering-pot or syringe would comfort the skin, but that would not do now. In regard to teaching, have the bird alone with you, and repeat the same word or phrase over and over again. If you cover its cage when receiving its lesson it will listen all the more attentively. Whistle the same tune in like manner. Keep the bird warm, and give it as much sunshine as possible. A cold winter kills hundreds of Parrots. With gentleness and kindness you may effect much. Unfortunately children and servants often tease or frighten them; both are bad. Sifted gravel it should have. Keep bird and cage very clean. Mind the Parrot's feet are carefully washed from impurities. Get the bird's confidence, and you will succeed with your pet, and find it a pleasure.

METEOROLOGICAL OBSERVATIONS,

CAMDEN, SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude 111 feet.

Date.	9 A.M.					In the Day.				
1871. Feb.	Barometer at 32° and Sea Level.	Hygrometer. Dry.	Hygrometer. Wet.	Direction of Wind.	Temp. of Soil at 1 ft.	Shade Temperature. Max.	Shade Temperature. Min.	Radiation Temperature. In Sun.	Radiation Temperature. On Grass.	Rain.
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
We. 1	30.045	32.2	31.9	S.E.	33.9	36 1	29 4	38.4	26.5	0.013
Th. 2	30.023	35.1	34.6	W.	34.2	37.8	32.1	42.2	31.3	—
Fri. 3	29.731	36.0	35.9	S.E.	33.9	44.0	33.4	43.4	33.2	0.210
Sat. 4	29.745	41.9	41.3	S.E.	34.8	48.1	35.6	58.3	35.0	0.055
Sun. 5	29.733	46.2	45.8	S.W.	36.0	51.0	41.0	64.3	40.0	0.122
Mo. 6	29.853	47.2	43.1	N.W.	37.6	52.8	43.2	88.2	39.8	—
Tu. 7	30.190	41.4	40.8	E.	38.2	49.8	39.0	49.8	34.9	0.311
Means	29.911	40.0	39.1	..	35.5	45.7	36.3	55.0	34.4	0.711

REMARKS.

1st.—Overcast in the morning, drizzle throughout the day, with a wet fog.
2nd.—Cloudy throughout the day.
3rd.—Overcast in morning, rain during the day, ceasing at 7 P.M.
4th.—Cloudy all day except at noon, rain between 7 and 8 P.M.
5th.—Fair in morning, southerly gale begun at noon, rain in evening, but fine after 8 P.M.
6th.—Beautiful day, both warm and bright.
7th.—Cloudy throughout, with heavy rain after noon.

Erratum.—The mean dry bulb reading for last week was misprinted as 36.1, it should have been 30.7.

The week just ending has been much warmer than any other of the present year, but even it is very little above the average, and the soil remains remarkably cold. The prevalence of cloud, which has attracted so much attention, still continues.—G. J. Symons.

COVENT GARDEN MARKET.—February 8.

Owing to the favourable change in the weather we have had a better supply of out-door produce, and the improvement noticed last week has been maintained. Of choice vegetables the quantity is still limited, although we have been able to procure some from St. Malo and that neighbourhood. Pears comprise Beurré de Rance, Easter Beurré, Ne Plus Meuris, and Jean de Witte; Apples—Ribston Pippin, Nonpareil, Court of Wick, Newtown Pippin, and others. The Potato trade report large supplies.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples ½ sieve	1	0	to 2	0	Mulberries lb.	0	0	to 0	0
Apricots doz.	0	0	0	0	Nectarines doz.	0	0	0	0
Cherries lb.	0	0	0	0	Oranges ℔ 100	6	0	10	0
Chestnuts bushel	10	0	18	0	Peaches doz.	0	0	0	0
Currants ½ sieve	0	0	0	0	Pears, kitchen doz.	1	0	2	0
Black do.	0	0	0	0	dessert do.	2	0	4	0
Figs doz.	0	0	0	0	Pine Apples lb.	5	0	8	0
Filberts lb.	0	0	2	0	Plums ½ sieve	0	0	0	0
Cobs lb.	2	0	2	6	Quinces doz.	0	0	0	0
Gooseberries quart	0	0	0	0	Raspberries lb.	0	0	0	0
Grapes, Hothouse lb.	5	0	10	0	Strawberries lb.	0	0	0	0
Lemons ℔ 100	6	0	10	0	Walnuts bushel	10	0	16	0
Melons each	1	0	4	0	do. ℔ 100	1	0	2	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes doz.	0	0	to 0	0	Leeks bunch	0	4	to 0	0
Asparagus ℔ 100	7	0	10	0	Lettuce doz.	1	0	2	0
Beans, Kidney ℔ 100	2	0	3	0	Mushrooms pottle	1	0	2	6
Broad bushel	0	0	0	0	Mustard & Cress punnet	0	2	0	0
Beet, Red doz.	2	0	3	0	Onions bushel	4	0	7	0
Broccoli bundle	0	9	1	6	pickling quart	0	4	0	0
Brussels Sprouts ½ sieve	3	0	4	0	Parsley sieve	8	0	6	0
Cabbage doz.	1	0	2	0	Parsnips doz.	0	9	1	0
Capsicums ℔ 100	0	0	0	0	Peas quart	0	0	0	0
Carrots bunch	0	4	0	8	Potatoes bushel	2	0	4	0
Cauliflower doz.	2	0	6	0	Kidney do.	3	0	4	0
Celery bundle	1	6	2	0	Radishes doz. bunches	0	6	1	0
Coleworts, doz. bunches	3	0	6	0	Rhubarb bundle	0	9	1	6
Cucumbers each	1	6	3	0	Savoys doz.	1	6	2	0
pickling doz.	0	0	0	0	Sea-kale basket	2	0	2	0
Endive doz.	2	0	0	0	Shallots lb.	0	6	0	6
Fennel bunch	0	3	0	0	Spinach bushel	3	0	5	0
Garlic lb.	0	3	0	0	Tomatoes doz.	3	0	0	0
Herbs bunch	0	3	0	0	Turnips bunch	0	6	0	0
Horseradish bundle	3	0	5	0	Vegetable Marrows doz.	0	0	0	0

POULTRY MARKET.—February 8.

Moderate supply and sluggish trade. There has been buying for transmission to Paris, but there are still difficulties in getting goods into the city if they are intended for sale.

WEEKLY CALENDAR.

Day of Month	Day of Week.	FEBRUARY 16—22, 1871.	Average Temperature near London. Day.	Night.	Mean.	Rain in 43 years. Days.	Sun Rises. m. h.	Sun Sets. m. h.	Moon Rises. m. h.	Moon Sets. m. h.	Moon's Age. Days.	Clock before Sun. m. s.	Day of Year.
16	Th	Meeting of Royal and Linnean Societies.	47.0	30.6	38.8	11	14 af 7	14 af 5	33 af 5	26 af 1	26	14 19	47
17	F		46.6	30.6	38.6	17	12 7	16 5	25 6	36 2	27	14 15	48
18	S		45.2	31.1	38.2	17	11 7	18 5	4 7	51 3	28	14 10	49
19	Sun	Quinquagesima Sunday.	44.9	31 0	37.9	15	9 7	19 5	36 7	8 5	●	14 5	50
20	M	Meeting of Entomological Society, 7 P.M.	45.5	30.7	38.1	14	7 7	21 5	59 7	24 6	1	13 59	51
21	Tu	Meeting of Zoological Society, 9 P.M.	46,7	32.3	39.5	20	5 7	23 5	21 8	37 7	2	13 52	52
22	W	Meeting of Society of Arts, 8 P.M.	46.3	31.9	39.3	19	3 7	25 5	39 8	48 8	3	13 45	53

From observations taken near London during forty-three years, the average day temperature of the week is 46.1°, and its night temperature 31.2°. The greatest heat was 59°, on the 16th, 1847; and the lowest cold 2°, on the 17th, 1855. The greatest fall of rain was 0.51 inch.

ORCHARD HOUSE MANAGEMENT.

THERE is no garden structure so easily managed, and yet so full of interest, as the orchard house. It has this advantage also—it can be erected at less expense than most other glazed structures. Let it not be implied from this that a cheap structure is the best, or even the cheapest in the end. If the work is substantial it will require a very small outlay to keep it in repair during the first twenty-five years; whereas a house built of inferior materials and ill-constructed will perhaps require considerable outlay after the first eight or ten years.

The original idea of an orchard house was a glass erection of the most primitive construction, to protect Peaches, Nectarines, Pears, and other fruit trees from spring frosts while in blossom, and to ripen the fruit better and at a less cost than can be done on walls. Whether fruit can be grown in an orchard house at a less cost I cannot say, but I am inclined to think that it can; that it can be grown of better quality in most cases there can be little doubt. Another obvious advantage is, that a crop of fruit can be obtained the second season after the house is built, with a small expenditure for trees. I have purchased Peach and Nectarine trees one year from the bud, and after growing them one season in pots, they have borne a crop of from one to two dozen of fine fruit. The trees must be carefully attended to during the growing period, but it is interesting work, and after a few lessons can be performed by unskilled hands as well as by the properly-trained gardener. Most gardeners are aware that to have a wall of Peach and Nectarine trees in good health and fertility, much care and attention are required; and after sufficient experience of a practical nature with both systems I can safely say that working in the orchard house is a much more agreeable occupation than attending to the requirements of wall trees.

The orchard house, to be effectual, should be heated in some way; hot-water pipes are the best means of applying artificial heat. The house here is a span-roofed structure, 24 feet wide by 12 high, and four rows of 4-inch pipes are required to keep out the frost during the time the blossoms are expanding. About the first week in January we manage to give the glass and woodwork a thorough washing; four hundred pots of Strawberries are then brought in and placed on a shelf, which extends all round the house near to the glass. Peaches and Nectarines are also brought in, and arranged more closely than they will ultimately be during the growing period. Some of the varieties do not set their fruit freely; these, with some of the others, will be removed out of doors to ripen the fruit after all danger from frost is over, and it is well not to risk the trees out of doors until the end of May or the beginning of June. I placed a number of pot trees of Peaches and Nectarines out of doors in a somewhat sheltered position in the first week of May last year, when the fruit were as large as horse beans; frosty nights set in, and 6° of frost on the 9th of May blackened and destroyed all the young fruit. The heating medium is not only required on frosty nights, but is equally useful in cold dull weather, as the circulation of air which it creates facilitates the setting of the fruit. As soon as this is fairly set ply the syringe vigorously amongst the trees night and morning, and on the first appearance of aphides give the house a good "dressing" with tobacco smoke, and continue to do so until they are destroyed.

Water the trees with clear water until the end of May, when occasional waterings with weak liquid manure will be beneficial. The trees ought also to be fed by surface-dressings applied for the first time in June. A good mixture for this purpose consists of half-decayed horse droppings, cow manure, and loam in equal proportions; a couple of handsful of this spread over the surface of each pot, and lightly pressed down, will soon bring the roots to the surface. This surface-dressing may be applied two or three times at intervals of three weeks. From the middle of May until the fruit is gathered all fruit trees in pots require abundant supplies of water at the roots, as if they suffer from want of that most necessary element at this time there will be no fine fruit. The same remark applies to Strawberries in pots; as soon as their trusses of flowers are thrown up it is not easy to overwater them. Some growers stand the pots in saucers which are kept full of water; this saves labour in watering, but I fancy the fruit is not so good.

Only the best sorts of Strawberries are grown in the orchard house, and quality is preferred to quantity. There are appliances here for forcing, but those who have no other glass structure should grow a few of Black Prince in the earliest corner, and Frogmore Late Pine as the best late sort. Numerous varieties have been tried here, but the best as yet are President, La Constante, Sir Harry, British Queen, Mr. Radclyffe, Dr. Hogg, and Frogmore Late Pine. I think highly of Lucas and Souvenir de Kieff; they were both first-rate out of doors last year, and will be tried in pots in the orchard house this season.

It is advisable to take the Strawberry plants out of the orchard house as fast as the fruit is picked, as no method of cultivation which I am aware of will prevent their being infested with red spider.

Ply the syringe vigorously on the fruit trees when the Strawberry pots are removed, as very shortly the earliest Peaches will be taking the second swelling, and as the fruit shows signs of ripening syringing must be discontinued, otherwise the flavour will not be good. The first Peaches to ripen are Early Beatrice and Early Rivers; the fruit is small, but valuable from coming in three weeks before Early York. Early Grosse Mignonne is a very fine second early Peach, but the trees are not so robust as the Early York. The last to ripen are Lady Palmerston, Comet, and Salway, all yellow-fleshed. Desse Tardive, an excellent late sort, fruited last year for the first time; this is worthy of extensive cultivation. I proved many new sorts last year, but owing to the exceptional season it was not possible to report on them.

The Nectarine season does not extend so long as that

of the Peach. Hunt's Tawny is the earliest, and the last to ripen are Victoria and Prince of Wales.

The best time to repot the trees, and still make sure of a crop in the following year, is as soon as the fruit is gathered. I reduce the ball of roots sufficiently to repot again in the same size of pot, by keeping the house close and syringing the trees, the foliage does not suffer, and in less than a week the young roots will be pushing into the fresh material. All the trees are either repotted or surface-dressed by the middle of October, and turned out of doors. The trees here have been treated in this way for many years, and are still healthy and fruitful.

I have been taken to task both by Mr. Rivers and Mr. Pearson for placing the trees out of doors. In the thirteenth volume of this Journal, page 329, Mr. J. R. Pearson says, referring to Peaches in pots—"If left out during winter I should not expect them to retain their buds, and if we had a cold winter I should expect some to be killed outright." He is quite mistaken; the trees do not drop any buds, and during the severest frost of the present severe winter not one tree was injured. Now, let us again turn to THE JOURNAL OF HORTICULTURE, vol. xvi., page 420, Mr. J. R. Pearson says, referring to his own orchard-house Peaches, "They are nearly a total failure." "Nearly all the fruit had fallen off," &c. Now, what was the reason of this? He tells us "that it was a total absence of sun when the trees were in bloom." My four rows of hot-water pipes came in useful just at that time, and I had a splendid crop. I showed thirteen varieties of Peaches and Nectarines at South Kensington; the first prize was awarded to the collection; also one dish of Royal George, which had the first prize, and was said to be the best-flavoured Peach in the room. At the same time I was gathering several dozens every day at home for my employer and his friends, and both Mr. Barron, of Chiswick, and Mr. Rivers's foreman, Mr. Perry, told me they were the finest orchard-house Peaches and Nectarines they had ever seen. It looks egotistical to write like this, but when you are called to order by such men as Mr. Rivers and Mr. Pearson, it is only right that you should state the result of the method of cultivation you advise others to practise.

My reason for removing the trees out of doors is that the entire house may be devoted to Chrysanthemums, and I advise all who possess an orchard house to fill it with them in the autumn. Some of the Chrysanthemums are grown for quality of flower; for this purpose two or three plants are potted in a 10 or 12-inch pot, they are trained to a single stem, and only three flowers are allowed to each. These plants can be placed closely together to form a centre or background as may be desired; if the house is a lean-to they are arranged to form a background, and in a span-roofed house they are placed in the centre bed, with, in front of them, specimen plants of the large-flowering, Japanese, and Pompon varieties, which will furnish a succession of beautiful flowers until the end of the year, and now, by the aid of the Japanese and some other late-flowering sorts, the bloom is extended far into January.—J. DOUGLAS.

ORNAMENTAL VARIETIES OF OUR NATIVE GRASSES.

NOT till I had seen the beautiful Dactylis elegantissima at Kew did I think that the British Grasses could be made so useful for garden decoration. Since then I have turned my attention to them, and, to a certain extent, think I have been successful, having found eight or nine varieties of Grasses with variegated foliage. The first variegated Grass I ever found was in Kent—a wee seedling plant, not an inch in height, of Holcus lanatus, Timothy Grass. The same season I found Alopecurus pratensis, Meadow Fox-tail Grass, in a meadow. These were both distributed by one of our most enterprising nurserymen.

I have since found Phleum pratense albo-marginatum, which was sent out by the same firm. I have now Phleum pratense aureo-variegatum, a fine Grass; a Poa, an Agrostis, Triticum repens, Lolium perenne, a new Dactylis glomerata, and several others that have not yet flowered. One in particular is a wood Grass, with a remarkably bold snow-white variegation.

I find that most of our British Grasses may be found in a variegated state by looking carefully over them where they abound, chiefly in sandy soils. My experience proves that they are only found in very small portions, being mostly sports.

My Dactylis glomerata is a curious plant, that never flowers, a stronger variety than the usual variegated variety. I was curious to know the reason of its not flowering, and find, after careful examination, the presence of a parasitic fungus, which not only prevents its flowering, but, I think, must be the cause of its variegation also. During the summer months this Grass regains its green condition till, during the winter, the spores of the fungus become again active.

I have raised thousands of seedling plants from variegated Grasses, but they all come up green, with the exception of Lolium perenne, and not more than one per cent. of this. Some of these Grasses make a nice variety in the mixed herbaceous border, others are good for edgings, and it has been suggested that the dwarfer-growing kinds might be planted for making simple figures on lawns, to be mown as usual—for instance, Poa trivialis argentea.

In a future note I shall say something about our English wild Geraniums, thinking them proper subjects to come under the hands of the florist, and I hope that others besides myself will give a helping hand towards introducing these native wayside beauties into our gardens, for there is no knowing what may be obtained by a thorough investigation of these humble members of the vegetable world.—W. E., *Gardener, Cromwell House.*

THE ROYAL HORTICULTURAL SOCIETY.

ANNUAL GENERAL MEETING.

FEBRUARY 14TH.

THE Annual General Meeting of the Royal Horticultural Society was held on Tuesday afternoon in the Council-room of the Society, South Kensington. The chair was taken by His Serene Highness Prince Teck, in the absence of the President, the Duke of Buccleuch.

The Scrutineers appointed for the ballot were Dr. Masters and W. Beattie Booth, Esq. On the Meeting proceeding to ballot for members of Council, Office-bearers, and Expenses Committeemen for the ensuing year,

HIS SERENE HIGHNESS said:—Ladies and Gentlemen, the work which those members of Council and office-bearers undertook last year, and the manner in which they performed their task, is so fully set forth in the Report which will be read to you, that I will not intrude upon your time by referring to the subject. I cannot, however, refrain from expressing my gratification at presiding for the first time at one of your meetings, especially when I can see that the future of the Society will be undoubtedly bright [applause]. Your finances are increasing, and there has been, and is, a continuous progress in that work which is the special mission of the Society. This year, besides, brings you into one of those international contests which lead, not to the destruction of the precious life of man, but to the nurture and protection of that life which is bestowed upon fruits and flowers for the sustenance, the delight, and the enjoyment of all [cheers]. I will now call upon the Assistant Secretary to read the Report, and in the meantime I will ask you to fill up the vacancies for the year.

Mr. RICHARDS, the Assistant Secretary, was about to read the Report, which will be found appended, when

Mr. S. H. GODSON remarked, that one of the gentlemen to be elected on the Expenses Committee was not now on the Council. It was irregular, he thought, to have the ballot for the Council made before that for the Expenses Committee.

Lord HENRY LENNOX.—It is only a matter of form which can be explained in a few minutes.

Mr. RICHARDS then read the Report.

Colonel CHALLONER said it was not with a view to find fault that he rose, because he considered that on the whole the Report was satisfactory, but he did so because they really knew nothing about the finances of the Royal Horticultural Society. They ought to know a little more about them. Of course upon any finance question he should address himself more particularly to those gentlemen who had charge of the finance department; and he ventured to put this question to them—Whether the balance of 1869 was £1331; that was a balance against them, whilst at the present moment they had nearly the same amount of liability? And he should also ask this question, "Does the account from January to December include all the ordinary expenditure of the Society?

Colonel SCOTT, Secretary, said the account showed the absolute expenditure during the year. At the foot of the account the item of £1592 for liabilities on current account would be seen. That showed the liabilities at the present moment.

Colonel CHALLONER observed that he should have been glad if he had had a more satisfactory answer when he asked the same question two or three years ago. He should like to see the finances of the Society make the same appearance as their banker's book—assets on one side, and so much liability on the other. He certainly did not wish to have what he would not call "cooked" accounts.

Colonel SCOTT.—But the account, sir, shows everything fully as far as any account can show it.

Colonel CHALLONER.—Am I to understand that the expenses of the Royal Horticultural Society, including those of Chiswick garden, amounted to £12,189?

Colonel SCOTT.—That is quite correct.

Colonel CHALLONER.—I have had a seat at the Council for many years, and having taken a great interest in the finances, I like to understand exactly in what position we are.

Colonel SCOTT.—As a matter of fact, comparing the state of the Society now with its state last year, we are close upon £1000 better [hear]. We have paid off a large amount of our liabilities. The account shows the amount of liabilities paid off, the amount of our present liabilities, and what our expenditure was.

Colonel CHALLONER. — Would there be any objection to have the balance sheet made out a little plainer?

Colonel SCOTT replied, that they would be very glad to do so if the way were pointed out.

Colonel CHALLONER said he felt assured the Council would carry out the wishes of the Fellows in the best and most economic way. He begged to move the adoption of the Report [hear, hear.]

Mr. G. F. BLENKINS seconded the motion, and congratulated the Society upon having achieved so much success in the past year. He trusted the International Exhibitions when established would prove a permanent benefit to the Society, bring to them an increase of members, and an increase of funds.

Mr. BATEMAN rose to assure his friends on the platform and in the room that in addressing the few remarks to them he was about to make, he was influenced by no hostile spirit. He unfortunately dissented from the congratulation offered by his friend, considering the bargain they had made and the terms they had received from Her Majesty's Commissioners of 1851. He was much afraid when people came to understand all these things they would scarcely think them a subject for congratulation. He felt certain that the Duke of Devonshire had acted loyally and honestly by the Society, and that the Council of the latter had done their very best to make the most advantageous terms they could with the Commissioners. But, let them just go back some fifteen or sixteen years when the bargain was made whence these terms came, which might have appeared comparatively easy at that time, because the day of reckoning was to a certain extent far off. He need scarcely inform the Fellows of the Society that the gardens in the midst of which they then were owed their origin to a brilliant idea springing from the fertile mind of the late Prince Consort, an idea which from the day of its conception had been undergoing expansion and extension. The late Prince Consort conceived the admirable idea of associating together all the arts and all the sciences in a sort of happy family at South Kensington, and in order to carry out that idea a large amount of money had been expended. A bargain was struck, and the expenses of these magnificent gardens were to be defrayed jointly by the Royal Horticultural Society and Her Majesty's Commissioners. Although they were to be defrayed jointly they were not to be defrayed equally, but partly by the donations of life Fellows, and partly by loan. Her Majesty's Commissioners were profuse in their offers; they were not to be exceeded in their generosity and the profusion of their gifts by a royal dispenser of good things at the table of a monarch [laughter]. Well, when money was borrowed interest generally had to be paid, but this was precisely what the Royal Horticultural Society had never been in a position to do. The Society had never been able to pay the interest, and therefore they were now at the mercy of Her Majesty's Commissioners, who had it in their power to impose upon the Society if they pleased terms which would be hard and harsh—just such terms as the Prussian victors seemed anxious to impose upon the beautiful and beleaguered city of Paris. Now what these terms were he wanted to make the Society understand, and he would endeavour to do that by referring to what the Society had gained and lost. He should first take what they had lost. They had lost three admissions to their own gardens, and they would have no power of admission to their own premises during the greater portion of the year. It was true the Report spoke of the gates of the gardens being thrown open to the large and promiscuous company which would crowd the exhibition. When they came to remember that at one end of the gardens there would be a number of people engaged in convivial hilarity, and at the other end countless articles of machinery at work, and somewhere about the centre the band of the Middlesex Volunteers in full play as well, the less they said about the whole thing the better [laughter]. Indeed, as he had read somewhere, the state of things would

> "Rend their ears asunder
> With guns and blunderbusses, swords and thunder."

—[renewed laughter]. At all events they would not find themselves, as they now were, in quiet seclusion, because, even supposing the Commissioners were so good as to refrain from allowing all promiscuous visitors to the exhibition to come into the gardens, still the season ticket-holders would have that privilege, and hence the privacy which the members of the Society would enjoy in their gardens would not be so great as that which might be had in any one of the principal squares in London. Now, having reviewed what they had lost, let them see what they had gained. In the first place they gained a view of that noble hall, which he would say—whether they looked at the grandeur of its proportions, the dignity or severity of its lines, or its perfect adaptation to the object for which it was intended—was a marvel of architectural skill, which reflected the utmost credit on his excellent friend, who was on the platform at that moment [hear, hear]. Much might, no doubt, he said about the appendages that were left, but the less said about them now the better; something might come out of them by-and-by. But then they were told no one was to be admitted into the gardens or exhibitions without a capitation toll of a penny; and as some 500,000 or 600,000 persons might probably come to the gardens and exhibitions, that number of pence would barely suffice to pay the interest due to the Commissioners on the loan. For his own part he must say he did not feel very grateful for what the Commissioners had done for the Society. Excluded during the better six months of the year from all enjoyment of the upper arcade, they would be partly excluded from the lower one during the winter months, and at a time when all the Fellows would be out of town they would have the privilege of visiting what was left of the exhibition. The grandest concession to the Society, however, was in the matter of tickets. It might be supposed that tickets would be offered to the Fellows of the Society for exhibitions which were held almost entirely within their own demesne; but no, they were not to have the tickets for nothing, but at a guinea less than other people. The public would pay three guineas, but the Fellows of the Society should understand at once that they could not have the privilege of walking in their own arcades without paying two guineas for that privilege. It did not always suit a person to pay two guineas. It was not everybody who had two guineas to expend, nor was everyone who had two guineas willing to expend them. They would find by looking at the Great Exhibition that by far the greater number of the well-to-do people did not spend anything like two guineas to go to the exhibition, and he thought it would be very hard to have to pay two guineas now to see a very inferior exhibition. He thought these terms were exceedingly hard. Let them suppose for one moment that any person was in the habit of supplying them with milk or cream, that he withheld the supply, and when they complained he said, "Oh, you can have three gallons of water at the cost of two" [laughter]. That was pretty much the way in which the members of the Royal Horticultural Society would be treated. He made these remarks in order that they might find an echo in the breasts of some of the members, and probably reach the stony hearts of the Commissioners [hear, hear].

Mr. CLUTTON said the interest which the Society had to pay was originally fixed at 5 per cent. It was then reduced to 4 per cent., in which the bondholders acquiesced. It was quite true if they had profits they would be bound to pay rent to the Commissioners, but they had not made any profits, and, therefore, they did not pay any rent. With respect to the gardens, he might say that the Society found the total funds for making them, and all the buildings round the gardens and the arcades were erected by the Commissioners of 1851. He had had something to do with the arrangement for admission made with the Commissioners, and he could tell Mr. Bateman he was under a misapprehension if he thought the reduction was a part of the arrangement. If was simply an offer of the Commissioners of 1851, and he thought it was very liberal to give the Society the use of two arcades, one on the east and the other on the west side. It had been originally intended by the Commissioners to make a conservatory on the top of the roof. That was objected to on the part of the Council, and the Commissioners gave way, although it was part of the original agreement that the Society should give up that part of the building. He thought he ought to explain these questions in which money was concerned.

Mr. GODSON differed from the last speaker as to accounts. If he looked at the accounts he would find that money had been paid, but not to a very great amount. By paying a certain sum every five years they saved the privilege of their gardens; and if the Council did not pay their portion it was their fault, and not the fault of the Society. He was quite pleased to hear some of the remarks made by Col. Challoner, who had never come out in a similar way before. Now, first of all, he (Mr. Godson), was sorry he could not join in the congratulation respecting the Report. They all knew very well that in the minutes of last meeting it was stated they would give up Chiswick. If that were so, why had it not been done? With respect to walls being erected at Chiswick, he had suggested to the Council that they should have them entirely to themselves, so as to be able to shut out nuisances. One great drawback to Chiswick was the Militia barracks. Referring to Mr. Bateman's speech, Mr. Godson said that with respect to that "hideous building" Mr. Bateman had spoken of, he had heard His Royal Highness the Prince Consort point out a very different idea. There could, he thought, be no objection to tendering the thanks of the Society to His Grace the Duke of Devonshire. No doubt Chiswick garden would have been a great resort had it been properly managed. He thought, considering that the Council did not state their terms with the Duke of Devonshire, it would be more prudent of them to put down in an appendix what the terms were, and then they should all know what they were going to do.

Mr. CLUTTON remarked that at the Exhibition of 1861 they were enabled to pay a sum of £2000 as rent.

Lord HENRY LENNOX said he would answer a very few of the objections which had been raised that day. He thought it was a matter of great congratulation for the Council to find that even in the hands of so able a man as his friend Mr. Bateman, the bill of indictment which he brought against the Royal Horticultural Society was so small a one. Mr. Bateman, who no doubt would have spoken differently had he been among the Council on the platform, said they could have got better terms from the Commissioners. Well, they all wanted to get the best terms they possibly could, but Mr. Bateman was a member of the Council when the arrangement was entered into with the Commissioners. Therefore in these days, when so much is said of full and

official responsibility in public matters, he should be glad to see Mr. Bateman re-elected that day a member of the Council, to share with the rest of the members the responsibility of the agreement entered into with the Commissioners of 1851, which he as a good Fellow of the Royal Horticultural Society would wish to see improved or at an end. Mr. Bateman said, and truly said, he greatly regretted the use of the northern arcades. When Mr. Bateman was a member of Council it was true the Commissioners did debar the Fellows from the use of the northern arcades; but since the amended agreement had been entered into the Fellows had returned to them, and the Commissioners had put up a roof or covered way, which had just been formed and would be kept up until the exhibition was at an end. His friend Mr. Godson, with whom he had the privilege of crossing swords on a former occasion, gave great and full credit to Mr. Bateman for his speech, which was quite different from what he was in the habit of hearing from him. He (Lord H. Lennox) quite agreed with Mr. Godson as to the brilliancy of Mr. Bateman's speech, but the chief brilliancy in it was that opinion given, when the truth was out, that he was the last man who would find fault with the Council—when he fully admitted the difficulties they had to contend with, and cheerfully acknowledged how well they had surmounted them [hear, hear]. That was the fact of Mr. Bateman's speech which the Council accepted cheerfully, and for which they tendered to him their thanks; and he (Lord H. Lennox) hoped that when Mr. Bateman rejoined the Council he would be able to say to the Fellows, "We have met here to-day. Last day I was in the position of an elector, now I am in that of a minister, and I will give to you an account of my stewardship" [hear and laughter]. Now, his friend Mr. Bateman said persons had told him that the visitors to the gardens of the exhibition would amount to some five hundred thousand.

Mr. Bateman.—From five to seven hundred thousand.

Lord H. Lennox.—Well, from five hundred thousand to seven hundred thousand. It was highly probable that of those who visited the exhibition many circumstances must tend to diminish or increase the number; and there was nothing about which doctors differed so much as to what numbers would probably come, but he and his friends were in a position to say—from the information and opinion of those to whom the fullest credit may be attached in a matter of this kind—that the number of persons who would visit the exhibition—now that they could breathe again at the end of the fearful struggle abroad—would run from two to eight millions [hear, hear]. In that case, if the numbers only reached the lower figure, the arrangement made with Her Majesty's Commissioners would very soon repay the Fellows of the Society. His friend Colonel Challoner wished to see the balance sheet plainer. All he could say on the part of the finance officers was that they should be only too grateful if Colonel Challoner put himself in communication with them, and suggested any means by which they could simplify the accounts. No doubt the experience of Colonel Challoner would be very useful to them. Mr. Godson also said, that grateful as he was to the Duke of Devonshire, he wished the Council had told the Fellows how far the Society had been benefited by the garden at Chiswick. But it should be borne in mind that the Council say in the Report: "The Annual General Meeting having left the question to the decision of the Council, they proceeded to make inquiries, but whilst engaged upon them his Grace the Duke of Devonshire, in a most liberal spirit, expressed his readiness, if the Society chose to remain at Chiswick, to accede to an arrangement for the renunciation of the lease of a portion of the garden; and accordingly a new agreement was entered into with His Grace, by which the garden is reduced from thirty-two acres to less than twelve, and the rent has sustained a corresponding reduction." That was the answer to Mr. Godson; the Duke of Devonshire had allowed them to reduce their garden from thirty-two acres to less than twelve, and the rent had sustained a corresponding reduction. And it was after that sentence that the following, which probably drew out Mr. Godson's observation, came:—"The Council are of opinion that the thanks of the Society are due to the Duke for the liberality with which he has treated them, both in respect of rent and the terms on which the renewed lease is granted. These terms leave to the Society the option of relinquishing Chiswick whenever they shall judge it conducive to the success of its operations to seek another garden. They therefore recommend to the meeting to record a vote of thanks to His Grace." He (Lord H. Lennox) was willing to answer any further question that might be put to him before he went away. The presence in the chair of his illustrious friend, Prince Teck, was most encouraging for the Society [applause]. No one knew better than Mr. Bateman the difficulties the Society had had to encounter for a long time. He thought the Report which had been submitted to the meeting was a proof that the Society was steadily—slowly and surely—assuming the place which was intended for it by the illustrious Prince Consort [cheers].

Mr. Godson wished to know, with respect to the agreement entered into as to Chiswick garden, what was the term of years given, because the Society had spent £20,000 or £30,000 on the place. How much of that, he should like to know, was preserved to the Society?

Lord H. Lennox.—Twenty-one years, and to be renewed at will.

Mr. Godson.—At the option of the Council and Fellows?

Lord H. Lennox.—Yes.

Mr. Bateman said with regard to a remark of his noble friend (Lord H. Lennox), that he should have probably spoken differently had he been on the platform among the members of the Council, he would only say his noble friend was aware, as others were, that whenever any matter was brought before the Council, he (Mr. Bateman) never departed from what he considered the right course [hear].

Lord H. Lennox said he had spoken from his parliamentary experience, which had shown him how much easier it was to speak when in opposition than when sitting at the Treasury side of the House [laughter].

The resolution for the adoption of the Report was then put and carried.

The results of the ballot were then declared; James Bateman, Esq., F.R.S., John Kelk, Esq., and E. J. Lowe, Esq., F.R.S., having been elected members of the Council in the room of the vacating members—Andrew Murray, Esq., F.L.S., Sigismund Rücker, Esq., F.L.S., and Dr. Thomson, F.R.S. The officers were also appointed as follows—President, His Grace the Duke of Buccleuch, K.G.; Treasurer, John Clutton, Esq.; Secretary, Lieut.-Col. Scott, R.E.; Expenses Committeemen, John Clutton, Esq., W. Wilson Saunders, Esq., F.R.S., and Sigismund Rücker, Esq., F.L.S.; Auditors, James Nicholson, Esq., John Gibson, Esq., and Robert Hudson, Esq., F.R.S.

The Report of the Auditors having been read,

Lord H. Lennox said it had been forgotten to return thanks to Col. Scott, who was the excellent Secretary of the Society, and worked without any remuneration. He therefore begged to move a vote of thanks to Col. Scott [hear, hear].

Mr. Bateman seconded the motion, which was carried.

Mr. Godson ventured to tender His Serene Highness the heartfelt thanks of the meeting for coming there and presiding on that occasion. He assured His Serene Highness that the Society need not look to the future with any apprehension, but, on the contrary, to great success, if he gave as patient attention and hearing at the Council as he had that day in presiding over the meeting [applause]. He begged to propose that the thanks of the meeting be given to His Serene Highness.

Colonel Challoner in seconding the motion, said it was a great advantage to have a member of the Royal Family amongst them, and they ought all to be proud at any member of that family taking the chair at their meeting [hear hear].

The motion having been carried by acclamation,

His Serene Highness said—In the unavoidable absence of your President, I was asked to perform the duties of Chairman, which any one, indeed, could perform better than myself. I beg to express my satisfaction at being associated with this Society, for I take a real interest in horticulture, and to thank you for your kindness [applause].

The proceedings were then brought to a close.

Report of the Council to the Annual General Meeting.

1. The Council have the satisfaction of announcing to the Fellows that a considerable improvement has been effected in the financial position of the Society since the last Annual General Meeting. They can also speak with satisfaction of the horticultural work of the past year and of the promise of the present one. They have again to report an increase in the number of Fellows; the number now on the books is 3376, being an increase of twenty-five since the last annual Report. The number of resignations has been unusually small during the past year, which is another hopeful sign of the increasing popularity of the Society.

2. The actual amount of subscriptions received is about the same as in 1868 and 1869. In the former year it was £7113; in 1869, £7193; and in 1870, £7177. That the receipts have not kept pace with the increase of Fellows is due to the fact that the Fellows have not so largely availed themselves of their privilege of obtaining transferable tickets as in former years. It is to be hoped, therefore, that the full value of the increased number of Fellows has not yet been felt, and that a return of the commercial prosperity of the country will bring with it a corresponding desire to the Fellows to obtain for their friends the advantages which the transferable ticket system confers.

3. The receipts from exhibitions during the past year were higher than in 1868 or 1869, and the Council have the pleasure of reporting that, notwithstanding the greatly increased number of shows, the exhibitions of the Society may again be said to be self-supporting. After a trial of two years the Council see no room for improvement in their established arrangements, excepting in matters of detail. These arrangements appear to be satisfactory both to the Fellows and to the exhibitors, and since they are also financially successful, and are adapted to the exhibition of the progress of horticulture throughout all the seasons of the year, it may be safely assumed that they are more conducive to the advancement of the objects of the Society than those which they have supplanted. The exhibitions of the last year, regarded as a whole, have never been surpassed in usefulness and brilliancy.

4. The country show at Oxford was the least successful, from a financial point of view, of those hitherto yet held. The Council are, however, not discouraged by the solitary instance of a slight loss on these valuable endeavours to increase the Society's usefulness and popularity. This year's Show is to be at Nottingham, and if any opinion can be formed from the interest there felt in the visit of the Horticultural Society, the Nottingham Show will mark a new step in the career of usefulness on which the Society entered when it undertook the sys-

tem of holding annual country shows. This, too, is the first instance in which the Society, accepting the invitation of a locality, has ventured to leave the support which the presence of the Royal Agricultural Society was supposed to give, and to trust to its own efforts and attractions for securing a sufficient number of visitors to render the exhibition self-supporting. The Council are happy to report that the zeal of the horticulturists of Nottingham, and that strong love of flower-culture which has rendered this city so celebrated, has already raised the special prize fund to no less a sum than £500.

5. The bequest of £2000 left to the Society by the late Mr. Alfred Davis has been invested in Consols. One of the conditions of the gift was that the interest of the money only should be applied to the uses of the Society. In accordance with this condition the Council have determined to apply the first proceeds from the interest of the bequest to the purchase of a challenge cup, to be called the Davis Challenge Cup, to be won for a certain number of years as a distinction for successful culture. The terms of competition will be published shortly.

6. The Council for some years past have felt serious concern at the gradually increasing burden which has been thrown upon the funds of the Society for rates and taxes. The charge is made upon an arbitrary assessment by the parish, and not in reference to the actual returns as a garden. An intention of still further increasing the rates last year was announced to the Society, but was resisted, and the amount remains unaltered.

7. The Scientific, Fruit and Floral Committees continue to do good service to horticulture, and that of the most valuable kind. The Council much regret that the accounts published of their proceedings at a very serious cost to the Society seem to be little appreciated by the great body of the Fellows. This is doubtless in some measure due to the fact that their contents are necessarily anticipated by the horticultural journals; but whatever the cause, the Council do not think that they would be justified in entering upon additional expenditure, in order to secure a more rapid publication of information, which can readily be obtained at a trifling cost by those who watch the proceedings of the Committees with interest. The publications of the Society prove to be chiefly valuable for communication and exchange with Societies and individuals abroad. The Council fear that, having regard to the interests of the large majority of the Fellows and the limited means of the Society, they have not yet found the best mode of employing the funds which can be devoted to the publication of its proceedings. This subject will occupy their earnest attention during the present year.

8. The collection of economic entomology continues to make progress, and the thanks of the Society are due to the Fellows and their friends, who from time to time send contributions. One of the latter (who desires to be anonymous), has offered a sum of money in prizes for the best collection of entomological objects. The nature and arrangement of the objects to be submitted in competition are to be defined by the Council, and they now have this matter under their consideration. Mr. Andrew Murray has also undertaken to give six lectures during the coming season on economic and forest entomology. Due notice will be given both of the dates of these lectures and of the terms on which the prizes are offered.

9. The most important question dealt with in the Report of the Council to the last Annual General Meeting, was that of the Chiswick Garden. In this case also the increase of rates and taxes pressed very heavily, and these coupled with a large rental and the working expenses of keeping up a garden far more extensive than corresponded with the present requirements of the Society, had, indeed, become so heavy as seriously to cripple its resources. The Council, therefore, distasteful as they knew such a step would be to many of the Fellows whose wishes and opinions were entitled to great weight, concluded, after much consideration, that the wisest plan would be to endeavour to obtain a small working garden in a purer atmosphere than that of Chiswick, at some distance from London. The Annual General Meeting having left the question to the decision of the Council, they proceeded to make inquiries, but whilst engaged upon them His Grace the Duke of Devonshire, in a most liberal spirit, expressed his readiness, if the Society chose to remain at Chiswick, to accede to an arrangement for the renunciation of the lease of a portion of the garden; and accordingly a new agreement was entered into with His Grace, by which the garden is reduced from thirty-two acres to less than twelve, and the rent has sustained a corresponding reduction. The Council are of opinion that the thanks of the Society are due to the Duke for the liberality with which he has treated them, both in respect of rent and the terms on which the renewed lease is granted. These terms leave to the Society the option of relinquishing Chiswick whenever they shall judge it conducive to the success of its operations to seek another garden. They, therefore, recommend to the meeting to record a vote of thanks to His Grace.

10. An immediate consequence of the reduction of the space under cultivation at Chiswick has been a reconsideration of the principle on which the collections of fruit trees should be maintained. The original idea was to keep up a collection of all the kinds of fruit trees admitting of cultivation in the English climate, and it is believed that at one time it was nearly, if not quite, a perfect one. Of late years, however, the increase of varieties has been so rapid, especially on the Continent, that it has for some time past ceased to have any pretensions to completeness, and a very large proportion consisted of inferior kinds rarely or never cultivated. The advisability of keeping worthless kinds has been often questioned, and the moment the collection ceased to have pretensions to completeness, the chief argument in favour of preserving condemned kinds vanished. The Council believe that their action in having weeded out, under the advice of the Horticultural Directors, all those varieties which were unworthy of cultivation, will meet with the general approval of cultivators of the present day. The preservation of the best kinds has been effected, partly by transplanting and partly by grafting, with the success which usually attends the skill of the Superintendent, Mr. Barron. Similar success has attended the removal of the hardy perennials to the part of the garden which has been retained. Some new borders flanking the great conservatory are devoted to them, and new varieties are solicited from the Fellows. The extensive collection of bedding Pelargoniums has also been preserved.

11. In accordance with arrangements which have been contemplated since Mr. Eyles has, with a degree of success highly satisfactory to him, entered upon the profession of a practising landscape gardener, that officer will this year cease to be the Superintendent of the Kensington Garden, but he will still remain with the Society as the Superintendent of Exhibitions, a duty which is quite compatible with the exercise of the profession he has engaged in. He will also remain as a resident on the grounds of the Society, and exercise a general supervision over them in the absence of Mr. Barron, who will continue to reside at Chiswick, and undertake the superintendence of both gardens.

12. The Council cannot omit from their Report the expression of their expectation that the Annual International Exhibition, to be opened on 1st May next, under the direction of Her Majesty' Exhibition Commissioners, will tend greatly to the progress of the Society's operations. The unfortunate circumstances of the French people at the present moment must necessarily interfere materially with the horticultural competition, which might otherwise have been expected from that nation, but both Holland and Belgium intend to do their best to contest the prize for successful culture with the British nation, notwithstanding the disadvantages under which they must labour from the difficulties of transit to this country.

13. It is incumbent, also, on the Council again to draw attention to the extent to which the Society's future welfare is bound up with the success of the objects which Her Majesty's Commissioners are endeavouring in so liberal a spirit to carry out, and to urge them to give to the Annual International Exhibitions their best support. A Society consisting of upwards of 3000 members, of whom the large majority hold a high position in the country, may do much to add to that large measure of success which may reasonably be expected from so important an attempt to add to the prosperity of the arts and industries of the nation. The Council have felt it right, believing that they were carrying out the wishes of the body they represent, to meet the Commissioners in every point in which it appeared that the proposed arrangements would conduce to the success of their great undertaking —an undertaking, of which the Society will share the benefits, being pecuniarily interested in the number of visitors to the Exhibition.

14. It is perhaps unnecessary to remind the Society that its Fellows, by the arrangements entered into with the Commissioners, have the privilege of obtaining season tickets for the Annual International Exhibitions at one guinea less for each ticket than the price charged to the public. These tickets, will admit both to the Fine Art and Industrial Galleries on each side of the gardens, and to the Daily Musical Performances in the Hall during the continuance of the Exhibition. The following modification in the terms of arrangement with the Commissioners respecting the use of the arcades being more favourable to the Society than the original propositions, the Council had no hesitation in concurring in it.

Office of H.M. Commissioners for the Exhibition of 1851,
5, *Upper Kensington Gore, London, W.*

Sir,—Referring to the terms of arrangement entered into between Her Majesty's Commissioners for the Exhibition of 1851 and the Royal Horticultural Society, for the use of the Society's Gardens by the visitors to the forthcoming Annual International Exhibitions, I am directed by Her Majesty's Commissioners to inform you, that during the progress of their preparations for those Exhibitions, the following modifications of the terms in question have suggested themselves to the Commissioners, who, thinking that if adopted they would prove beneficial alike to the Commissioners and to the Society, have directed me to communicate them to you for the consideration of your Council.

In Article 1 it was agreed that the Society should give to the Commissioners the use of the Northern Arcades, the Commissioners providing in lieu thereof, for the use of the Society, a covered communication on the roofs of those structures, between the Orchard House entrances and the Conservatory.

Her Majesty's Commissioners now propose that the Society should retain the North Arcades, thus preserving their present and more convenient means of access to the Conservatory, and should give to the Commissioners instead the exclusive use of the Eastern and Western Arcades, which would be enclosed, at the expense of the Commissioners, by a light trellis-work fence. The covered communication over the North Arcades, which has been erected by the Commissioners in compliance with Article 1, would then be used by them as a means of access to the Royal Albert Hall, and to the wings of the Exhibition Galleries, the communication being completed by means of a passage along the back part of the Gallery of the Conservatory.

As the Commissioners have acquired from Her Majesty's Government the temporary use of the South Arcades, they also propose, as a part of this new arrangement, to construct a passage beneath the Council-room of the Society, and thus to complete the circuit of the Gardens.

With reference to Article 8 of the terms of arrangement, securing to

the Fellows of the Society the exclusive use of such portions of the annexes as are not required by Her Majesty's Commissioners, I am directed to inform you that the development of the Exhibition will necessitate the occupation of the whole, or nearly the whole, of the annexes, and that, consequently, the Commissioners would be unable to leave to the Fellows, to any substantial extent, the privilege contemplated by the article. On the other hand, Her Majesty's Commissioners propose (but, without binding themselves to a course which might prove very detrimental to the success of the Exhibitions) to make the experiment of curtailing that free use of the Gardens by visitors to the Exhibition, which was provided for in the original arrangement, by making an extra charge for admission thereto. The effect of this measure would obviously be to secure to the Fellows of the Society a much greater degree of the quiet which they have hitherto enjoyed than they would retain if the Gardens were to be thrown open to every visitor to the Exhibition.

I have the honour to be, Sir,
Your obedient servant,
HENRY Y. D. SCOTT, Lieut.-Colonel, R.E.
Secretary.

The Assistant Secretary of the
Royal Horticultural Society.

15. The Council desire, in conclusion, to record their satisfaction at the successful completion of the Royal Albert Hall, in which a large number of the Fellows of the Society are shareholders. They are informed that Her Majesty has announced her intention of opening it on the 29th March next.

EXTRACTS FROM THE REPORTS OF THE HORTICULTURAL DIRECTORS.

SCIENTIFIC COMMITTEE.—Numerous matters of greater or less interest have come before the Scientific Committee during the past year, which are recorded in the Society's journal. Amongst these the most prominent are Mr. Glaisher's observations on the meteorological records which have been carried on for so many years at Chiswick. It is a great satisfaction to the Society that the doubts as to their accuracy since 1860 have been quite cleared up, and a comparison of them with coteimporaneous observations at Greenwich has enabled him to attain many useful results which will be published in an appendix to the journal.

The experiments on the effect of different manures on the comparative development of a certain number of plants have been carried on very carefully at Chiswick, and the results which, notwithstanding the unfavourable season, have been of much interest, and are already published.

Mr. Anderson-Henry has sent some valuable observations on hybridisation, and Mr. Andrew Murray has lately read an interesting paper on that subject, as illustrated by the phenomenon of mimetic insects.

Amongst minor matters the occurrence of a manna-like substance on Peach leaves and twigs at Chiswick, but which really appeared to be more allied to stearine, deserves especial notice, as also Mr. Laxton's observations, accompanied by specimens, on the effect of crossing in Peas on the colour of the seed.

POMOLOGICAL DEPARTMENT.—In consequence of the contemplated changes that were decided upon at the beginning of last year, in the garden at Chiswick, it was considered impolitic to cultivate that portion of it which has hitherto been occupied as the orchard and kitchen garden, and consequently no experiments were last year undertaken in the open ground. But the great success that has attended the cultivation of the more tender kinds of fruits in the new orchard house has resulted in securing very copious notes on Peaches, Nectarines, and Apricots, which will serve in the preparation of future reports on these subjects. For some seasons past considerable attention has been given to the investigation of the numerous varieties of Figs, hitherto in a sad state of confusion as to nomenclature, and a correct knowledge of their merits and characteristics; and again this season great additions have been made to the observations already obtained.

The inside border of the great vinery (formerly the conservatory) has been entirely removed, as well as the Vines which it contained, and the house is now furnished entirely by Vines growing in the outside border, which has been considerably enlarged.

Notwithstanding the abandonment of the old orchard, the whole of the valuable collection of fruit trees has been preserved, only duplicates, and some varieties which had been proved essentially worthless, having been destroyed; yet some of these, which had acquired a symmetrical habit of growth, were successfully re-grafted with superior varieties, and will preserve their place in the collection. An entire rearrangement of the whole collection, both of Apples and Pears, has been made, and will occupy compartments on the new ground which has been broken up and laid out for the special purpose.

The crops of fruit have, during the past season, been generally abundant, with the exception of those on the Pyramid Cherries and Plums, which were almost a total failure.

By the new arrangements that are being made in the garden there will be ample space at command for carrying out all experimental operations which the Society can desire; and the more compact state of the garden will admit of a concentration of labour which could not formerly be obtained, and thereby conduce to greater ease and efficiency in the conducting of experiments and the preparation of reports.

As has been the case in former years, so in the past, the Fellows of the Society have largely availed themselves of their privilege of obtaining scions, cuttings, plants, and seeds from the garden; and nurserymen especially, who are Fellows, appear to estimate at the proper value the privilege of renewing and correcting their collections of fruit trees from the trees at Chiswick. During the past year 62,000 packets of seeds have been distributed; 2250 sorts of cuttings of fruit trees, including many collections of Figs, Vines, and Gooseberries.

FLORAL DEPARTMENT.—The floral department at Chiswick has rendered the Society good service during the past year. First, as regards supply. The number of plants distributed to the Fellows, by ballot or otherwise, has been 13,700, and the number of packets of flower seeds, 60,000; while the contribution to the garden at South Kensington, though less than usual as regards numbers, owing to the reduction of the bedding-out there, has extended to 28,144 plants.

Though it was found impracticable, under the circumstances in which the Superintendent was placed, to carry out the usual trials of new varieties of Bedding Pelargoniums, &c., yet a successful effort has been made to retain the extensive collection of sorts which had been got together, with the view to resume these useful critical comparisons as soon as practicable.

The collection of Hardy Perennials, which it is hoped may be further extended from year to year, has also been preserved, and removed from that part of the garden which has to be given up. Some new borders flanking the great conservatory have been devoted to them, and further contributions to the collection are solicited from any of the Fellows, or others, who take interest in herbaceous plants—a class which has latterly been far too much neglected.

The cultivation of stove plants—one of the least useful and most expensive branches of the floral department—was relinquished when the necessity for curtailment became evident, the houses being devoted to the growth of less tender plants for the conservatory at South Kensington.

Amongst the subjects provided for ballot during 1871, will be found some novel and extremely interesting fringed-flowered Petunias, both double and single; which have been raised at Chiswick. They are very handsome plants, and will form a pleasing variety amongst Petunias. Other novelties raised at Chiswick, and which will be distributed in the course of the season, are a fine new Dieffenbachia; Tacsonia speciosa, a handsome Passion-Flower; some of the golden-leaved Caladiums referred to last year; and variegated zonal Pelargonium Amy Richards, which is considered to be one of the best bedding varieties yet obtained.

Abundant facilities will be afforded in the new garden for carrying on the useful work of the floral department, it being intended to form beds for the experimental trials of flowers on a strip of ground between the Council-room and the conservatory—a situation which is in every way well adapted for the purpose.

STATEMENT OF ACCOUNTS from 1st of January to 31st of December, 1870

RECEIPTS.

	£	s.	d.	£	s.	d.
To Life Compositions	546	0	0			
„ Admission Fees	365	8	0			
„ *Annual Subscriptions	7177	0	0			
„ †Garden Produce and Charges	573	5	11			
„ Daily Admissions and Promenades	463	6	9			
„ Rent of space in Arcades	424	0	0			
„ Exhibition and Fêtes	1277	7	0			
„ Miscellaneous	39	19	8			
„ Interest on Davis Bequest	4	15	7			
				10,876	2	11
„ Balance				1,313	9	6
				£12,189	12	5

Assets. Subscriptions unpaid £735 0 0
†Garden Produce, due but unpaid. 175 0 0
910 0 0

EXPENDITURE.

	£	s.	d.	£	s.	d.
By Balance from 1869				1331	18	11
By Chiswick Garden Expenses—viz.:—						
Rent, Rates, and Taxes	224	4	7			
Labour	902	4	11			
Implements, Manure, Coke, &c.	126	5	3			
Repairs	48	12	4			
Trees, Plants, and Shrubs	9	18	0			
Miscellaneous	24	3	6			
				1335	8	7
Alterations in Garden				31	14	9
By Expenses of Management—viz.:—						
Salaries	427	4	11			
Journal	12	12	6			
Horticultural Directors, Fruit, and Floral Committees, &c.	401	2	6			
Foreign Importations	11	9	6			
Examination of Gardeners	30	1	4			
Postages	77	0	0			
Distribution of Seeds, Plants, and Cuttings	59	10	10			
Reading Room	20	6	6			
Gas	35	19	6			
Wages	224	0	0			
Miscellaneous	51	13	2			
				51	0	3
By Expenses of Exhibitions—viz.:—						
Advertising and Posting	30	13	3			
Prizes and Medals	805	13	0			
Bands	424	0	0			
Police	5	0	10			
Labour, Judges' Fees, Luncheons, and Sundries	128	9	4			
Expenses of Permanent Exhibition	90	11	2			
				1484	7	7

By Kensington Garden Expenses—viz.:—	£	s.	d.	£	s.	d.
Labour	936	13	4			
Rates, Taxes, and Insurance	1002	5	9			
Engineer	22	7	9			
Water	10	17	6			
Repairs	77	2	9			
Implements, Manure, Coals, and Coke	60	12	6			
Gravel	3	15	0			
Trees, Plants, Seeds, &c.	21	2	2			
Superintendent's Salary	200	0	0			
Miscellaneous	24	13	10			
				2359	10	7
Conversazione				68	2	8
By Interest on Debentures				1943	13	5
„ Liabilities of 1869 paid off				2283	15	2
„ Liabilities on Current Account, £1592 1s. 7d.						
				£12,189	12	5

3rd of February, 1871.

Audited and found correct,

JAMES NICHOLSON,
ROBERT HUDSON,
JOHN GIBSON,
} *Auditors.*

FRUIT AND FLORAL MEETING, &c.

FEBRUARY 15TH.

THIS Meeting was one of the most successful the Society has ever held—successful in the diversity, the interest, and the beauty of the objects which it was the means of bringing together at a season when plant-life is only beginning to awaken from its winter's rest; successful in a still higher degree in the almost unprecedented attendance of visitors, so great that standing room in the afternoon was as much as they could obtain, and of that there was none to spare. The combined meetings and shows have evidently been a step in the right direction, and have aroused and kept alive an amount of horticultural interest, greater than the most sanguine ever expected.

FRUIT COMMITTEE.—G. F. Wilson, Esq., F.R.S., in the chair. The Sub-Committee appointed at last meeting to report on the merits of the Galloway Pippin, reported that it was a cooking Apple of first-rate excellence, and a first-class certificate was accordingly awarded to it. Thomas Laxton, Esq., of Stamford, sent a seedling Apple, A, raised from Stamford Pippin fertilised by Golden Noble. It is medium-sized, roundish, and sometimes a little conical; the skin yellow; eye open, and stalk short; the flesh yellowish, firm, crisp, and juicy, with a nice perfume. It was commended. Another seedling, marked B, was smaller, flat, and also yellow, with a long stalk, firm, crisp flesh, and of good flavour. Mr. Laxton also sent six dishes of Apples in excellent preservation, to show the successful mode in which fruit may be kept in an underground wine-cellar, with no communication with the external air, and only a slight opening into another cellar, when the fruit will keep for a considerable time. The whole of the fruit sent had been kept packed singly, eye downwards, on deal shelves, covered with newspaper to prevent the wood flavouring the fruit.

Mr. E. J. Lowe, of Nottingham, sent a seedling Apple, raised from Bess Pool. It had a very strong resemblance to its parent in every respect, and the flesh was firm. It was not, however, considered superior to the older variety. Mr. Rivers, of Sawbridgeworth, sent fruit of Passe Crasanne Pear, grown by Mr. Tyler on a tree grafted on the Quince stock. The flavour was good, but not remarkable. Mr. Parsons, of Fairlawn, Acton Green, sent good specimens of Beurré Rance Pear, which were void of flavour. Mr. Tillery, of the Gardens, Welbeck Abbey, sent three dishes of Apples from a wire trellis, to show the fine colour they had attained during the past season. Cox's Orange was by far the best in flavour, being superior both to Ribston Pippin and Melon Apple, the latter being long past its season. Mr. Domenico Piccirillo, of Wigmore Street, sent dishes of Sweet Limes and Lemons, grown at Portici, to which a special certificate was awarded. Mr. Chilman, Somerley Gardens, Ringwood, sent fruit of Black Jamaica and Montserrat to ascertain if they are identical. A Sub-Committee was appointed to investigate the whole question of the nomenclature of Pine Apples, and to report at next meeting.

Mr. Gilbert, of Burghley Gardens, sent a collection of nine varieties of Potatoes, consisting of Coldstream Early, Jersey Blue, Prince of Regent, Pink-eyed Regent, King of Potatoes, Selected Lapstone, Myatt's Ashleaf, and Rivers' Ashleaf and Silver-skin. They were very fine samples, and received a special certificate.

Prizes were offered for the best three dishes of Dessert Apples and the best three dishes of Dessert Pears. Many fine dishes of both fruits were exhibited. The first prize for Apples was awarded to Mr. Garland, gardener to Sir T. Dyke Ackland, Bart., Killerton, for Cox's Orange Pippin, Cornish Gilliflower, and Ribston Pippin; the second prize went to Mr. A. Parsons, gardener to W. J. Blake, Esq., Danesbury. For Pears the first prize was also taken by Mr. Garland with Winter Nelis, Bergamotte Esperen, and Easter Beurré; Mr. Miles, gardener to Lord Carrington, Wycombe Abbey, being second with Beurré de Rance, Monarch, and Easter Beurré. The finest dish of the last-named variety was, however, shown by Mr. Sage, gardener to Earl Brownlow.

FLORAL COMMITTEE.—Mr. J. Fraser in the chair. Messrs. Rollisson and Sons, Tooting, sent a beautiful group, chiefly consisting of Orchids. Among these were a remarkably fine specimen of Cypripedium villosum with a score of fully-expanded flowers and buds, and a magnificent plant of the white and gold Cœlogyne cristata a yard across. In the same collection were Vanda tricolor insignis, very fine in colour; Odontoglossum pulchellum majus; Cypripedium insigne Maulei, a very fine variety; Odontoglossums; Dracæna Guilfoylei, and Lomaria gibba crispa. Davallia clavata, a very elegant new Fern also came from the same exhibitors.

Mr. Denning, gardener to Lord Londesborough, sent a superb group of Orchids, including a magnificent specimen of Cœlogyne cristata, blooming even more freely than Messrs. Rollisson's plant, and a remarkably fine specimen of Dendrochilum glumaceum; Odontoglossum Alexandræ, O. cariniferum, several fine varieties of Cattleya Trianæ, Lycaste Schilleriana, Pilumna fragrans, deliciously scented, and Trichopilia suavis were also represented by finely-bloomed plants. There was also a cut spike of Phalænopsis intermedia Porteana, the colours of which are very beautiful, especially these of the lip, which is magenta, shaded with orange at the base.

From the Society's garden came a fine collection of Orchids, consisting of Lycaste Skinneri, Oncidium Cavendishii, a lovely variety of Cattleya quadricolor, &c.

Mr. Williams likewise sent a group of Orchids containing a very fine specimen of Cypripedium villosum, Lælia superbiens, lovely; Vandas, Cattleyas, Odontoglossums, Cœlogyne media, Pleione humilis, &c. Mr. Williams also exhibited a collection of Palms, and a most effective miscellaneous collection, comprising hybrid Solanums, Hippeastrums, Aucuba luteo-carpa, the berries, however, having a reddish tinge, and various flowering plants, the gem of which was the lovely Tillandsia Lindeni, of which a figure and full description will be found in vol. xviii., page 359.

Messrs. Veitch, of Chelsea, contributed a splendid miscellaneous group, in which were several Lycastes, Dendrobium crassinode, a magnificent spike of Odonteglossum Alexandræ, Hyacinths in fine bloom, Aucubas in berry, and Hippeastrums. Messrs. Veitch also sent a very fine collection of Cyclamens, and one of Chinese Primulas of an excellent strain.

Messrs. Dobson & Sons, of Isleworth, likewise sent a collection of Chinese Primulas; and Mr. Tomkins, nurseryman, Birmingham, Princess Louise Chinese Primrose, with large white flowers tinged with blush. Mr. Kinghorn, Sheen Nursery, Richmond, exhibited a very fine specimen of the green-leaved Aucuba, covered with dense clusters of its brilliant berries.

From Mr. Ball, Chelsea, came a numerous collection in which were several Palms, a fine Encephalartos, Encephalartos Ghellinchii, Dracænas, Aucubas, and numerous Orchids. Gastronema flammea, with beautiful intense rosy crimson flowers, received a first-class certificate, and is a great acquisition.

Mr. Ware, Hale Farm Nurseries, Tottenham, sent a very interesting collection of spring-flowering plants, such as Cyclamen repandum, C. Atkinsi, Primula denticulata, Spiræa japonica, Iris reticulata, &c. Mr. Ware also exhibited a collection of succulent plants.

Messrs. Cutbush & Son, Highgate, exhibited a large and very effective miscellaneous collection, in which were a number of remarkably fine Hyacinths, Spiræa japonica, and Cytisuses, backed with Palms.

From Mr. W. Paul, Waltham Cross, came a group of eight fine specimen Camellias full of buds and bloom, and with dark glossy foliage betokening perfect health and vigour. Accompanying these were a number of smaller plants not in flower, and in front of all a row of Correa cardinalis about 1 foot high, and producing a profusion of their brilliant scarlet blooms, which offered a striking contrast to the green leafage behind. Mr. W. Paul also exhibited boxes of very fine cut blooms. Mr. Baxter, gardener to C. Keiser, Esq., of Broxbourne, also sent a box of fine cut blooms, and one of Kelvingtoniana, very large and fine. From Mr. Goddard, gardener to H. Little, Esq., Cambridge Park, Twickenham, came a fine collection of Cyclamens, and a similar collection of larger plants in fine bloom came from Mr. Day, Acton Green. Mr. W. Paul again exhibited his Primula, Waltham Bride, with very large pure white flowers. Mr. George, gardener to Miss Nicholson, Putney Heath, again sent his new Solanum, called Robustum aureum, with orange berries. E. J. Lowe, Esq., Highfield House, Nottingham, sent several seedling Ferns, among which were Polystichum angolare Moorei, a dwarf form raised from P. angulare acrocladon and depauperatum; also Scolopendrium vulgare proteoides, with a remarkable diversity of fronds, the plant being a viviparous one from a frond of S. v. pseudo-Wardii.

Mr. Green, gardener to W. Wilson Saunders, Esq., exhibited a new species of Agave from Africa, and A. Bessereriana amœna, of a glaucous hue, with dark-coloured very sharp spines.

Messrs. Veitch sent a collection of plants to compete for the prizes offered by Major Trevor Clarke, for the exhibitors obtaining the greatest number of marks for plants illustrating the phenomena of hybridisation. Messrs. Veitch's specimens consisted of Alocasia Sedeni, Nepenthes hybrida, N. hybrida maculata, Rhododendron Princess Royal, Goodyera Veitchii, Echeveria glauco-metallica, a fine specimen of Nepenthes Dominiana, and a Cypripedium.

Mr. Stevens, gardener to G. Simpson, Esq., Wray Park, Reigate, sent a basket of Lachenalia tricolor, which had an ornamental effect as a hanging basket. Messrs. Paul & Son sent Hippeastrum vittatum rubrum to show its utility as a hardy early bulb for forcing. At Cheshunt it is grown out of doors and merely protected with some leaves.

First-class certificates were awarded to Mr. Green for Agave Bessereriana amœna; to Mr. Tomkins for Primula Princess Louise; to Mr. Denning for Pilumna fragrans; and to Mr. Bull for Gastronema flammea.

Special certificates were awarded to the following—viz., to Mr. W. Paul for Camellias in pots, also for cut blooms; to Messrs. Rollisson for a group of plants; to Mr. Denning for a collection of Orchids; to Mr. Ware for Succulents and spring flowers; to Mr. Edmonds for Cyclamens; to Messrs. Cutbush for a miscellaneous group; to Mr. Denning for Dendrochilum glumaceum, also for Cœlogyne cristata and Pilumna fragrans; to Messrs. Veitch for twenty-four Primula sinensis and for Cyclamens; to Mr. Day for specimen Cyclamens; to Mr. Stevens for Lachenalia tricolor; to Mr. Bull for Orchids, also for his collection of Palms, &c.; to Mr. Goddard for Cyclamens; to Mr. Baxter for cut Camellias; to Mr. Williams for a group of plants, also for a collection of Orchids; to Messrs. Veitch for their miscellaneous group of plants; and to Mr. Kinghorn for his berried Aucuba. A special certificate was also given for the group from the Society's garden.

Prizes were offered for the best six Primulas. The first prize was awarded to Mr. G. Goddard, gardener to H. Little, Esq., Twickenham, who had finely-bloomed plants of white and crimson varieties. Mr. Edmonds, Hayes Nursery, was second, having two pretty little double varieties.

The first prize for the best three Dielytras was awarded to Mr. Bull for specimens by no means remarkable. No second prize was given.

Prizes were also offered for six Lycastes. Mr. Denning, gardener to Lord Londesborough, had the first prize for three remarkably fine specimens, and three of less size, Lycaste Skinneri being the only kind shown.

A letter from the Rev. Joshua Dix, the Chairman of the Committee, was read, tendering his resignation of that office in consequence of illness, but the Committee expressed a strong feeling against the acceptance of the rev. gentleman's resignation, and requested he would continue with them at least till the end of the year.

General Meeting.—J. Bateman, Esq., F.R.S., in the chair. Thirty-one new Fellows having been elected, and the Committee awards announced, the Rev. M. J. Berkeley, in remarking on the objects exhibited, particularly directed attention to Tillandsia Lindeni, which, he said, was most exquisite, and promised, in the case of Mr. Williams's plant, to produce a long succession of its azure flowers, a colour than which none probably was more wanted in our collections. Mr. Bull's Gastronema, at first thought to be a Vallota, was next referred to as being a brilliant Amaryllid, a true Gastronema, and entirely distinct from G. sanguineum. Scolopendrium vulgare proteoides, from Mr. Lowe, was then noticed as being a great curiosity, producing on one root Parsley-like, forked, and pinnated foliage, and on this a number of bulbils, by which it could be propagated. Mr. Bobinson had brought a beautiful golden Lichen from California, of which a specimen was before the meeting. It was the same as Borrera flavicans, which grows on trees in Devonshire and in Madeira. The tuberiform bodies which are found on the roots of Peas, Beans, and other Leguminosæ had recently occupied some attention, and they had by some persons been considered to be galls produced by insects, by others as being connected with the nutrition of the plant. Similar bodies had been noticed on Conifers and the Alder. At present nothing certain was known respecting their nature, but he had sown a quantity of Bean seed in order to endeavour to arrive at some satisfactory conclusion.

Mr. Bateman said he had never seen a richer gathering of Orchids than that exhibited, and expressed his gratification at seeing the nurserymen putting forth their strength. In connection with the beautiful Phalænopsis from Lord Londesborough, Mr. Bateman remarked that there was a prospect of new species of Phalænopsis and other Orchids from a Scotch gentleman in New Guinea. That vast island was the most perfect *terra incognita* he knew of, for, except that Wallace had given an account of his travels on its western side, he was aware of no other white man who had visited it. He had been authorised by the Society to secure the assistance of the gentleman referred to in collecting plants. Messrs. Veitch's Dendrobium heterocarpum was noticed on account of its delicious scent of Violets; also Pilumna fragrans from Lord Londesborough, and which should now be called Trichopilia fragrans. It, together with Cœlogyne cristata, some of the Cattleyas, and Odontoglossum Alexandræ were what he called bridal Orchids, from their colours being white and gold. After referring to some other Orchids exhibited, Mr. Bateman said the golden Lichen would be an admirable substitute for what was known as French Moss, so much used in dinner-table decoration, and which lately it had not been possible to obtain. He thought it would well repay anyone who would get the urchins in Devonshire to collect it, in order to send it to the London market.

Mr. William Paul then read a paper on the Camellia, which we shall publish next week.

Mr. Marshall said there appeared to be some misapprehensions with regard to the conditions of competition for the challenge cup [These were stated at page 49.], and again explained them. He further remarked that the challenge cup of the value of £50, to be given to anyone winning it three times had been withdrawn, and a cup, value £25, to be given yearly, was to be substituted.

Royal Horticultural Society's Prizes for Primroses.—We are requested to state that the competition for prizes offered for Primroses by the Royal Horticultural Society will take place on April 5th instead of on May 3rd.

ROYAL HORTICULTURAL SOCIETY'S PRIZE FOR HYACINTHS.

The prize for white Hyacinths was intended as a special premium for a definite purpose. What this was I will try to explain, by taking the case of an intending amateur purchaser of a few good Hyacinths for the ornament of his house or houses. The first thing he does is to consult his nurseryman's bulb catalogue, where he finds from twenty to forty sorts of each colour, single and double respectively. From these lists he has to make his choice on very inadequate data. Price is scarcely a criterion, for many of the finest sorts are comparatively cheap; often, too, the difference in quality between these and some higher-priced novelties is not very striking. Many varieties so nearly resemble each other, that none but a Dutch grower or other expert could distinguish them, much less the ordinary lady or gentleman amateur. By the proposed method of exhibition, a good number of varieties of one description of flower, as to colour, will be, as it were, paraded for inspection by the public, who may thus gain such a knowledge of the respective merits of varieties as could be obtained in no other way. The white form was selected as best suited for a trial of the merits of the system, to be followed by like premiums for other colours. Your correspondent would have no difficulty in purchasing two additional whites in the trade to make up his collection.

I hope the Rev. H. Dombrain, whose opinion in such matters is entitled to respect, will see that the premium in question was not a mere random or meaningless experiment.—C.

CIRCULAR FLOWER BEDS.

Of the various geometrical forms introduced into flower-garden designs there is none so useful as the circle; the ease with which it may be adapted to any position, its graceful outline, and the great scope which it affords for producing skilful combinations of colour, all tend to make it very desirable for this purpose. Seen in contrast with angular beds circles are quite certain to be viewed favourably; the soft outlines meeting the eye from every point of view convey an impression of grace and refinement such as the most skilful planting fails to impart to the stiff formality of an angle. Another advantage is, that a number of circles of the same size may be arranged in groups of three or more, or a large circle may be surrounded by a ring of smaller ones.

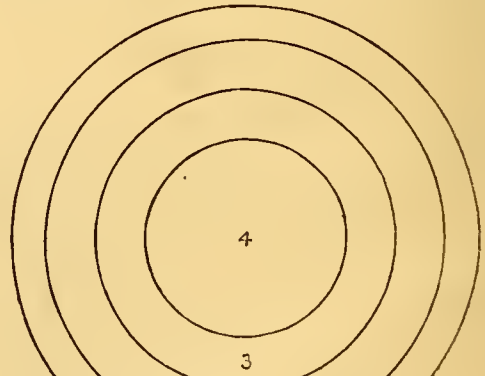


Fig. 1.

In planting such beds due regard must be paid to their size. Those measuring from 3 to 6 feet in diameter appear best when filled with one colour only, while in larger circles two or more colours may be introduced with an equally pleasing effect. In the latter case it is of much importance that the subdivisions should be so arranged as to be sufficiently clear of each other, in order to present the design to the eye free from all confusion. To do this it is best to mark the outline of any figure which

may be introduced into the circle with distinct-coloured, erect-growing, fine-foliaged plants, so that each compartment or division of the design may stand out clearly and distinctly, however intricate may be the pattern. There are a large number of figures suitable for such a purpose, a knowledge of geometry enabling one to introduce them in an almost endless variety; but I would always prefer simple forms rather than very intricate ones, not to avoid any difficulty of colouring, but because a design composed of a few simple lines is certain to produce the more pleasing effect.

By way of illustration I append four examples, each having two distinct arrangements of colour. All these designs are suitable for circles of from 10 to 20 feet in diameter.

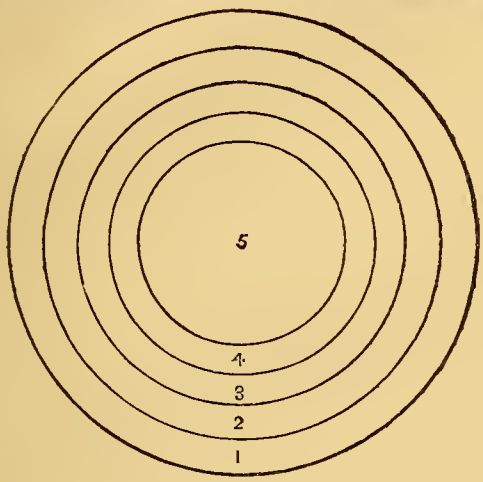


Fig. 2.

ARRANGEMENT OF COLOURS.

Fig. 1.
1. Sempervivum californicum
2. Lobelia Trentham Blue
3. Coleus Verschaffelti
4. Pelargonium Lady Cullum

Or—

1. Pyrethrum Golden Feather
2. Iresine Lindeni
3. Pelargonium Miss Kingsbury
4. Purple King Verbena

Fig. 2.
1. Gnaphalium lanatum
2. Iresine Herbstii
3. Gnaphalium lanatum
4. Iresine Herbstii
5. Chrysanthemum Sensation

Or—

1. Cerastium tomentosum
2. Lobelia speciosa
3. Vinca major elegantissima
4. Iresine Lindeni [Gem
5. Pelargonium Crystal Palace

Fig. 3.
1. A ramp faced with one row of Sempervivum californicum
2. Alternanthera amœna
3. Variegated Japanese Honeysuckle
4. Santolina incana
5. Lobelia pumila elegans
6. Alternanthera amœna

Or—

1. Cerastium tomentosum
2. Lobelia Trentham Blue
3. Santolina incana
4. Iresine Lindeni
5. Pelargonium Pearl (Pearson's)
6. Polemonium cæruleum variegatum

Fig. 4.
1. Alternanthera amœna
2. Pyrethrum Golden Feather
3. Pelargonium Miss Kingsbury, with the flowers kept picked off.
4. Heliotrope Beauty of the Boudoir
5. Pelargonium Maid of Kent

Or—

1. Santolina incana
2. Alternanthera amœna
3. Pelargonium Crystal Palace Gem
4. Lobelia Little Gem
5. Coleus Verschaffelti

I have thus combined a few choice bedding plants, but it should be remembered that the position of a bed and the nature of its surroundings must be known before any suitable arrangement of plants can be given for it. Take, for instance, a circle or number of circles situated on a broad, extensive lawn, or near a lofty mansion, or where there are large specimen shrubs, the planting of these beds should certainly be massive in character, even if the beds are 10 or 12 feet in diameter. One bed might be a mass of crimson with a broad band of yellow; the next might have three colours—white, pink, and purple; then we might have a grand mass of Golden Tricolor Pelargonium Lady Cullum surrounded by a broad band of Trentham Blue Lobelia; and so I would go on to the end with these alternating masses, just sufficiently varied to avoid monotony. Fancy a chain of such beds on a wide-spreading lawn, the beds surrounding yet well away from a fountain of an architectural design, and with fine masses of shrubs, or noble specimens of these, forming an enclosure or background, and you have a scene of rare loveliness—simple it may be in form, yet so graceful, rich, and dignified, that it might bear favourable comparison with the most complicated geometrical design. No objection could be taken to it on the score of heaviness, for the waters of the fountain would impart lightness and animation, and would also serve to agreeably break up or relieve the other-

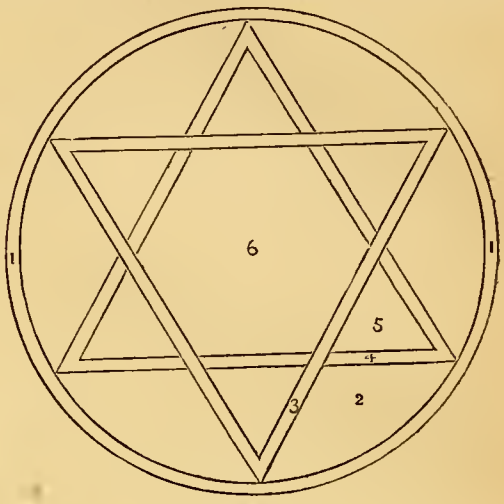


Fig. 3.

wise flat surface. It is in the few beds of small gardens or grounds that I would introduce a more mixed style of colouring

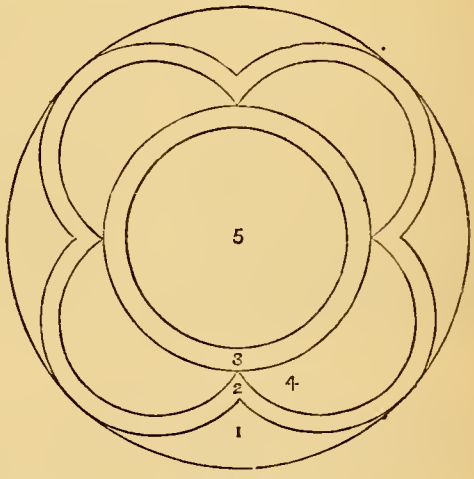


Fig. 4.

throughout, aiming to combine as much of interest and beauty as the space would admit of.—Edward Luckhurst.

WHAT IS A WEED?

At a meeting of our Mutual Instruction Club last Monday, the question was asked by one of our members, Is not any plant a weed that is growing where it is not required? This led to a dispute, and many were the answers as to What is a weed? Failing to reach to a unanimous answer, it was resolved to ask for your definition.—A. R.

[No plant in the estimation of the botanist is a weed, but with the gardener any herb that is not cultivated for its utility, beauty, or fragrance is a weed. Your member's definition is too wide. Mignonette sprung up among Cabbages would not deserve the epithet of a weed—it would only be a flower in the wrong place. Whilst writing we have had the following extract from the *Philadelphia Ledger* brought to our notice:—"It is stated that there are now no less than 214 weeds which have been introduced into the United States from foreign countries, and principally from England. As a proof of the rapidity with which useless plants are accidentally brought over the seas, it is said that in 1837 there were only 137 foreign weeds known in this country. As far back as 1672 a curious little volume,

called "New England's Rarities," gave a list of twenty-two plants which the author considered had sprung up since the English had kept cattle in New England. The author mentions the Plantain, which, he says, the Indians call the "Englishman's foot," as though produced by the tread of the white settlers. The common Yellow Toad Flax, it is stated, was originally introduced into the province of Pennsylvania as a garden flower by a Mr. Ranstead, a Welshman, residing in Philadelphia, from whom it has derived the name of Ranstead weed. In 1758 this weed had overrun the pastures in the inhabited part of Pennsylvania, and was the cause of bitter complaints from the agriculturists of that day. Chickweed, it is stated, was introduced in South Carolina as food for canary birds, and in ten years spread for upwards of fifty miles, and now occupies the outposts of civilisation. The Scotch Thistle is said to have been brought to America by a clergyman who carried with him a bed stuffed with Thistle down, in which some seed remained. Feathers being cheap in the new country were substituted for the down, which was soon emptied out, and the seed springing up filled the country with Thistles. Another account says some enthusiastic Scot introduced the Thistle as an emblem of his country, which soon made itself at home and became a nuisance." We do not know whether our American cousins will add to their Alabama claims a claim for compensation for the intrusion of weeds, but, if they do, we hope our Government will plead as a full set-off the introduction of that unconquerable American aquatic weed, Anacharis alsinastrum, which is filling our ponds, choking our reservoirs and hampering our water-wheels.—Eds.]

DEATH OF VINES UNEXPLAINED.

Six of my Vines are quite dead. There were thirteen in the house, all healthy flourishing canes last year, and seven are so still. They are side by side, and all treated exactly alike. They were all pruned as usual and dressed the same as in other years. From half to three-quarters of a pound of tobacco paper, 2 ozs. of Gishurst compound, a little sulphur, and a little soot and lime were all boiled-up together, and stood two days and two nights. I dressed the Vines twice, also a late vinery and Peach house. I covered-up the border at twice fearing it would heat, and started the Vines on the 1st of January, when I found the result I have mentioned. I have well examined the roots and find they are quite alive and full of sap. The Vines are quite a mystery to me and all my fellow gardeners.—A Constant Reader.

[A number of years ago we chronicled how Vines and Peaches in a large place were nearly killed, and no reason could be assigned except the dressing. We can think of nothing else. The boiling of materials makes a great difference, and if the wood were unequally ripened, we should not be surprised. What say our readers? If the roots had not been examined, we might have given that for a reason.—Eds.]

RABBITS AND APPLE TREES.

Do cordon Apple trees breed rabbits, as the barnacle, according to our ancient mariners, did barnacle geese? I begin to think so, for till the frost and snow last Christmas I saw no rabbits; but then came the storm of snow and rabbits, their traces like as if a multitude had spent the night near my Apple trees. They commenced operations by biting off all the buds—the frost some 12° or 14°. The next operation was taking off the bark from the young shoots; then came 20° to 26° of frost, and all the shoots were eaten and the stems barked, so that my trees were skeletons. I believe myself to be a victim to fine writing, for I think I read in your columns (no, it must have been in some other periodical), that cordon Apple trees would make a fortune for a market gardener if properly trained. I had had some planted in my walled garden for two or three years, and, although they had not borne abundantly, yet they gave me fine fruit, and looked pretty when in bloom; but this market-garden business awoke me as from a sleep, and so the last two years I planted cordons rather extensively, and now, when just on the point of reaping the fruits of my labour, the rabbits are before me.

I could not protect without a large quantity of bushes or straw, and the cosmetics—painting, with the usual odorous compounds—I found not of the slightest use. The only safe method of growing cordon Apple trees is in a walled garden, for if fenced with wire, rabbits burrow under the fence, unless the lower portion is buried. It is very remarkable to find in severe weather the great love for Apple trees shown by hares and rabbits. Some old men have told me that hares have been traced in the snow three miles and upwards from a preserve to a garden. I quite credit this, for whereas I had not seen a hare till the 22nd of last December, I was astounded to see their numerous traces from that period. If anyone wishes to see rabbits and hares by moonlight in severe weather, he should plant cordon Apple trees in an unfenced garden.—A Rabbit Victim.

WORK FOR THE WEEK.

KITCHEN GARDEN.

Continue the preparation of ground for crops in general, but beware of carrying it on when the soil is wet; better be a fortnight late with any crop. Where the soil of the kitchen garden is light and sandy it is best dug or trenched some weeks before it is wanted for certain crops, especially Broad Beans, which like a firm hold of the soil. Give all *Asparagus* beds a slight salting; this should be done after soiling, the rains will carry the salt down. A bed of early *Cabbages* may be sown on a warm border, also shortly some *Leeks*, Green *Kale*, *Savoys*, and *Brussels Sprouts*, for early purposes. *Onions* should be sown as soon as possible; choose a piece of ground which has been deeply dug or trenched, and well manured, throw it into beds, sow it when dry, cover thinly, and roll hard, except in the case of clayey soil. It will be well to strew cinder ashes or very sharp sand amongst the stems of the early *Peas*, as the slugs, from long confinement, will be unusually voracious this spring. Let the *Parsnips* be sown as soon as the ground is in a fit state. Replant all old Box edgings, and keep them for the future neatly and closely clipped. Repair all other edgings to walks, and take advantage of the gravel walks being soft to turn them, and to roll them firmly. Much may now be done in a day, and in a better manner than when the surface is hardened by parching winds and hot sun, and the walks will be more easily kept in good condition afterwards. Keep correct memoranda of all proceedings, the quantity and quality of manure made use of for all crops, the state of the soil when applied, and the success or otherwise of the application. The knowledge how a manure has acted on certain soils in other seasons, will be found useful as a means of discovering the cause why results do not always accord.

FRUIT GARDEN.

I shall suppose the pruning, tying, and training of espaliers and all other fruit trees has been brought to a conclusion, except, perhaps, as regards a few Peaches and Nectarines, and that the trees which are infested with Moss and Lichens have been dressed as before recommended. It will now be very interesting to notice the daily progress of the bed which, considering all matters, is seldom observed in finer condition for future prospects. Every advantage must be taken of drying windy days to stir and hoe the surface, and a sharp look-out must be kept to prevent injury to the buds of wall trees now in a forward state. Where nets or bunting cannot be procured for protecting the blossom, suspend from the top of the wall to the bottom of the trees a quantity of straw or hay ropes, made with a few projecting loose straws; dry fern or spruce branches may be nailed over the branches of the trees with advantage, Look to the Fig trees; prune and train those requiring it. tying or bending the strong shoots down, which will induce them to push out a number of very short-jointed bearing shoots.

FLOWER GARDEN.

All grass lawns should now have a thorough rolling, and all turfing repairs should be completed forthwith. Where it is absolutely necessary to cut the edges of walks, let it be done now, and as soon as accomplished run a heavy roller several times up and down the edges to soften the cut line. All edges should, if possible, have a slight inclination towards the walk, and they should only be fresh cut in consequence of irregularities in the line. High-kept lawns should have a single mowing soon after rolling. The severe weather we have had nearly up to the present time has precluded any floricultural operations being carried forward. There never was, however, a better time for collecting and forming composts, and preparing for future use, by frequent turning, those which have already been made. The amateur has no excuse if his soil heaps have not been frozen through and through during the severe weather, and the whole tribe of insects and their eggs completely exterminated. Auriculas should have the decayed and decaying leaves carefully removed, and, if not already applied, a top-dressing of fresh compost; a gradual increase may take place in the supply of water. Carnations and Picotees in pots require to be kept clean and comparatively dry, and they should have the surface of the soil frequently stirred. The compost for potting them in

due time should be prepared; it may consist of the following ingredients—viz., one-half of turfy loam, one-fourth of manure reduced to the state of fine mould (cow dung is to be preferred), and one-fourth of coarse gritty sand, which may be road or river sand. Even small stones may be allowed for drainage, when the necessary waterings need give rise to no unpleasant apprehensions.

GREENHOUSE AND CONSERVATORY.

Young plants of Allamandas, Clerodendrons, Torenias, and many other subjects, if encouraged with a little bottom heat and favourable circumstances, will form useful specimens in a few months, and large masses of Statices, than which few plants are more serviceable, will under good treatment be obtained in a short time. The showy Impatiens Jerdoniæ should also be encouraged by every possible means to make wood, and let it be propagated as quickly and freely as possible, for it is very useful for autumn decoration. The dwarf Heliotropes, where sweet-scented flowers are in request, will likewise be found useful for blooming under glass. In fact, where the stock in hand is deficient, as it will be in many places after so severe a winter, not a day should be lost in making every possible effort to provide for what is likely to be wanted. Pelargoniums should be duly attended to in respect to staking and tying out the branches, so as to induce them to form handsome specimens. They will bear repotting the moment blossom-buds are formed at the ends of the shoots. Tender annuals, as Balsams, Cockscombs, &c., may now be sown. They succeed best in a frame, on a gentle bottom heat furnished by means of fermenting materials. Although heat is indispensable for raising these, it is not necessary for flowering them; indeed, most of them would bloom more beautifully if planted out in June in a warm, sheltered part of the garden, than if treated as greenhouse plants. Continue occasional sowings till the end of April in pans placed close to the glass, in a temperature of from 60° to 65°, keeping the soil moist, and shading it from bright sunshine. Care must be exercised to prevent the young plants from damping-off or being drawn up through want of air. As soon as they can be handled prick them off singly in small pots, or place three round the edge of a 4-inch pot, plunging them in a gentle heat till they can be safely trusted in the open borders; or they may be pricked out in rows on a spent hotbed, shading carefully, and giving plenty of air when the weather will permit. To secure fine plants and a profusion of bloom it is of the greatest importance to sow early. Attend carefully to the stock of bedding plants, and pot off rooted cuttings as soon as they are in a fit state for that purpose. Encourage them with a gentle bottom heat and careful management, to make quick growth, for after this season there is no time to be lost with young stock.—W. Keane.

DOINGS OF THE LAST WEEK.

After close sloppy weather we were again visited with a sharp black frost on the night of the 10th and 11th, the first rather unexpectedly showing some 14° below freezing in the morning. The frost has been favourable for rough groundwork, as moving soil, making alterations, levelling, &c., but it has retarded much work in the way of planting, where the roots must necessarily be exposed. A great many young trees and shrubs intended for profit, for ornament, protection, or game cover are much injured when the roots are exposed for some time to a dry parching frosty wind, such as we had on the two days mentioned above. When a number of men are anxious for work a line must be drawn between what is due to them and the ultimate welfare of the trees. To their credit, be it said, most of the great nurserymen send out trees in winter so well packed and secured at the roots, that it is next to impossible they can be injured. Even if a severe frost should reach the roots through the packing, that will do but little injury if light and wind be kept from them. In other nurseries we have seen numbers of fine trees and shrubs taken up, and their roots left exposed for days in frosty weather before being sent out. In such cases fresh roots, fibres, and even large-sized roots must be formed before there is much growth, and this, we have no doubt, is one reason why trees that often break well in the spring after planting begin to become stunted, brown, and shrivel up and die as the sun gains power, there being no root-action to supply the demands of sun and heat on the stem and unfolding shoots.

KITCHEN GARDEN.

For this department refer to the notices of last week. Trenching and turning soil must be the order of the day in the open ground, and preparing for and sowing Beans and Peas, and getting both forward under protection for planting out as the first crops.

Red Lead for Seeds.—In making all such sowings, taking past experience for our guide, we shall coat every Pea with red lead before sowing. A very little lead, as much as may be held between the thumb and two fingers, if these are of average size, will do for a quart of Peas, previously merely damping the Peas a little, or placing water over them for a few minutes, and then draining all the water clean off before applying the lead, and working it all through the Peas with a flat wooden stick, as it is advisable to use the hand as little as possible among the damp lead. If the sower has any cracks or cuts on his hands he had better sow with a rounded trowel or something of that sort, and be careful to leave no lead between the flesh and nails of his fingers. By this mode we have found that nothing will touch the Peas or other seeds so used until the seedlings are above ground; and the singular point is that rows of Peas thus treated seldom have a single hole made in them, the intruders of all kinds, fowl and four-footed, having an instinctive knowledge that what is below is not for them. We have sown rows leaded and unleaded side by side. The first never had a hole made in them, the second in the course of a week, from mice, pheasants, &c., had scarcely a seed left. As the small quantity of lead used merely for colouring would be thrown off by the expanding and ultimately perishing seed leaves, we cannot see how the small quantity of lead could have any injurious property on the crops presented at table. Without netting or anything of the sort, we do not think we lost a seed of any of the Cabbage, Turnip, or Lettuce tribe, to which the red lead was applied. In such instances no more seed should be coloured than it is intended to sow at one time.

Cabbages.—Though, as we stated last week, all the forward crops have greatly suffered, if they have not been quite destroyed in many places, we are glad to hear that where the soil was light and dry the plants have stood well, and will, therefore, be extra valuable. We have been informed, too, that in many places fine beds of seedlings have stood well, and, therefore, there will be a chance of getting Cabbages, though not so early as in the generality of seasons. Those who have no other resources must plant as soon as possible in well-pulverised soil. Where there are the means of placing the plants in a mild hotbed, under glass or other protection, either singly in small pots, or some 4 inches apart, in rich soil to be raised with balls, and in either case transferred with well-established roots to nice, friable, pulverised soil, much time will be gained. All this labour may to some people seem next to thrown away; but, then, they cannot look upon a nice crisp Cabbage early, with the heart just turning yellow, as we do. Whilst we regret that so many of our cottage gardeners are deprived by the frost of what would have been to them a source of wholesome food, we rejoice that others are more fortunate, and thus a better price will be obtained for what they choose to sell.

An old friend of ours when there was something like a general failure of some particular vegetable or fruit, used to express his satisfaction and something like thankfulness, that he was no worse off than his neighbours. There may be something soothing in knowing that we have companions in such failures and disappointments. We never could see, however, how the failures and disappointments of others joined to our own could help us in the least, or form any source of consolation. In the present instance, as respects the standing or the failing of the Cabbage tribe, we believe there is little room for glorying or boasting of the success, as the most of it would depend on the peculiarities of the weather, of the soil, and of position. If the readings of thermometers be at all correct, there have been wonderful variations of temperature this winter, in what we should be led to consider similar circumstances. Strangers coming here on such days as the 11th, can hardly manage to keep themselves warm. Even a mile or half a mile will often make a great difference as to our sensations of heat and cold.

FRUIT GARDEN.

See previous weeks' notices. During the week there would be about one hour and a half of sunshine, and that would do wonders for Peaches in bloom. We need not, however, repeat what has lately been stated. Anything like fruit-tree planting has been out of the question, but pruning and nailing could be proceeded with. In all weather fair above head, there is little

difficulty as respects pruning; a man can keep himself comfortable at that. But what is the use of nailing when the fingers cannot hold the nail and shred comfortably? We have pretended to nail with the trees covered with snow, and the snow drifting enough to smother one. What was the use of such waste of labour power, with work needing to be done under shelter? We are sorry to say that such ill-timed work is frequently beyond the control of the gardener. Some proprietors, if they set their mind on having certain work done, have no idea of a stoppage from that work, let the weather be what it may. Years ago we made two visits to a large place within the space of two or three months. On the first occasion men with their coats buttoned to the chin as a defence against the heavy sleet and rain, were wheeling a large heap of dung on to the quarters with the wheel of the barrow up to the axil in mud, and doing great damage to the walks. On the second occasion, the same men were in some danger of sun-stroke in washing and cleaning Vines in a vinery in a bright sunny day. Leaving other considerations out of view, there could be little fitness or economy in such ill-directed, ill-timed labour.

Heating.—We have just had fresh piping put into a small division of a vinery. We could not at present enter on the large one-boiler system. For this compartment and other places there was a small separate boiler. In the vinery part we had only one pipe round underneath the stage, helped by shallow zinc reservoirs which we connected afterwards with this one pipe. These and the pipes had become too worn-out to be cobbled or mended. We could not help ourselves as to having the fresh pipes going round underneath the stage, but we carried out one of the ideas which we have often advised others to adopt, and that is to have as many flow-pipes as possible, and these on a level. As the flow and return pipes were there, and not far apart, there was joined to each a three-flow outlet syphon, so that we had three pipes round instead of the one. These three pipes are on a level with each other, and rise regularly some 3 inches from the point of junction with the flow to the outlet syphon at the return, and an open air pipe is there inserted. The three pipes round therefore act as flows. They heat well and equally, and there is only a very short return from whence the three pipes terminate at the highest point. We are aware that in theory there are some objections to this mode. These and other matters as respects heating need ventilating. All we can say at present is that we are satisfied, and that we have advised and adopted the plan from finding that in stacks of pipes above each other the highest pipes are always the hottest.

ORNAMENTAL DEPARTMENT.

Our time has been chiefly employed in *alterations and groundwork*, altering what had been done years ago. There is hardly a place where much may not often be done in this way. Different people have not only different tastes, but the same person may change his taste as often as he pleases. At one time the proprietor may rejoice in mounds, rough work, and the wild and tangled picturesque appearance, and such will ever present a contrast to the richest and most dressed parts of the pleasure ground. At another time such a scene, however pretty, diversified, and picturesque, may become monotonous, and cease to yield the pleasure it once did, and something of the gardenesque may be more desired, where the mounds, and the tangle, and the wildness, and variety may be replaced by the smooth lawn, with specimen shrubs and trees that will have room to grow and to show off their separate beauties. Whoever pays for such changes has a right to consider the improvements. They therefore do good in two ways: they give satisfaction to those who wish to have them made, and they often give employment when that is scarce. Everybody likes change. We often think if we possessed an estate, and chiefly resided on it every day of the year, we should become tired of it, and of seeing things day after day in the same position. We believe that fine gardens and noble conservatories are generally more appreciated by visitors than by the resident proprietors. Elegance and novelty are combined in the case of the former; the elegance is combined with an irksome sameness in the case of the latter. Hence, the advantage of all changes. We can easily imagine that the finest flower beds, the most elegant plants growing in a bed in a conservatory, the finest tree Ferns standing always in the same spot in a fernery under glass, in time lose more than half their charms to the resident proprietor, just because he sees them always in the same place and under the same circumstances.

We are apt to forget that the most pleasing objects seen day after day become at last irksome and insipid. Variety, freshness of combination, would often do wonders where there are the labour and other means at hand for carrying them out. Thus, flowers are always delightful in a common greenhouse. To the visitor all is novel. The same arrangement day after day becomes tiresome to the proprietor. Hence, in the case of a fair-sized conservatory, where beauty, elegance, and good taste, combined with a continued and growing interest in it by the proprietor, are to be first considerations—judging from our own feelings, were we similarly placed, we would plant out little except the climbers, but we would have beds deep enough so that the pots used might be covered with moss, and a band of Lycopods round, and then by arranging the plants differently every fortnight or so, the fresh combinations would in everything essential make a fresh house. Even in a greenhouse, where no attempt is made to conceal the pots, much may be done to dissipate monotony by changing the forms and sizes of groups and combinations. For resident proprietors a simple change is often as good as a real improvement, and on this account all changes that make variety are desirable. The plan of a flower garden may remain the same, and yet some variety may be produced by planting it differently every year. Were the design changed every year it would be better still. Few can equal our coadjutor, Mr. Robson, in this respect, but we have often thought what a source of pleasure it must be to the proprietors of Linton Park to be able to look on two fresh plans of the principal flower garden every year. Even that might not be sufficient variety for some people who have a dread of the monotonous. The subject is too large to admit of our doing more than giving these passing hints.

We shall be anxious to commence turfing before long, and then it will give us no trouble in summer.

Some main features as respects out-door work have already been alluded to. The forcing of flowering plants has also received notice lately.

Bulbs.—There are complaints about these not doing well, and the flower stems being so short and dumpy. After duly potting, &c., the first essential to success is having the vessels filled with roots, whether pots or glasses, before the flower stem begins to move much; before that takes place the bulbs will be best in a dark place, such as a cupboard in a room, or any sheltered place out of doors where they can be covered up. Again, if the stems do not rise freely after the bulbs receive the heat of a sitting-room, a paper funnel placed over them, or even a reversed pot, will greatly assist to elongate the stem, and thus give room for the flowers to expand.

All forward bulbs out of doors would be better in such weather of a little protection, such as cloths or mats over hoops, or a little dry soil or ashes over the bulb, or even evergreen twigs securely stuck in over the beds. The soil should be well mellowed for Ranunculus and Anemone planting; Auriculas should be top-dressed with rich light compost in mild weather, and the plants kept from rains; and Carnations and Pinks defended from cold, slugs, and mice, not to say anything of rabbits and hares.

Many of our window and small-house gardeners will now be thinking of *potting and repotting* their favourite plants; numerous young growing plants will need more room, and many, as Geraniums and Fuchsias, breaking after being shortened back a little, will want to have much of the old soil cleared away, and to go at first into pots of the same size as before, or even smaller. The following are great helps to success—1st, See that the soil and roots of a plant are moist enough before repotting. If you put a dry ball into fresh soil it is next to impossible to wet it again by common watering. 2nd, See that the pots used are clean and dry. If not, besides other disadvantages, the ball will not come out clean and whole, but it will hang like birdlime to the sides of the pot. 3rd, Be sure that the soil used is fresh, well exposed to the air, warm, and not too fine. In cold weather the necessary warmth can easily be obtained by placing it near a fireplace, where no other means can be resorted to. It is well that the soil for all in-door plants should average about 60°. Then, as to roughness, the plants will thrive all the better if, for 4 and 6-inch pots, fully half of the bulk of the soil should range from the size of peas to that of field beans, mixed with the finer particles. A little of the rougher should go over the drainage. There is no better drainage then a zinc cap over the hole, or a good crock with the rounded side downwards, and in either case smaller pieces of broken pot round it and over it, and a slight layer of green moss over all, the roughest compost over the moss. Finally, avoid everything that will give a check to the plant, either by

subjecting the roots to extra cold water or cold soil, or the tops to a continued cold atmosphere, whilst they have previously been used to a temperate one. Sowing and cutting-striking indoors must receive future attention.—R. F.

TO CORRESPONDENTS.

*** We request that no one will write privately to any of the correspondents of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By doing so they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely to The Editors of the Journal of Horticulture, &c.*, 171, *Fleet Street, London, E.C.*

N.B.—Many questions must remain unanswered until next week.

Books (*E. P.*).—"The Pine-Apple Manual." You can have it free from our office by post if you send thirty-two post-office stamps with your address. (*M. Brown & Co.*).—Hogg's "Fruit Manual." Last edition, 1866. Price 5*s*. Out of print. New edition preparing.

Fruit Manual (*W. C.*).—The new edition is preparing for the press, and when ready will be advertised.

Iron Pipes Choked (*W. A. G.*).—As you have a pipe to empty the boiler, we would risk placing from one half to 1 lb. of sal ammoniac in the supply cistern, getting a good heat up, and after a day or so draw off the water, fill with fresh, and repeat the dose. We advise this more in theory than as warranted by our own practice. An ounce of sal ammoniac put now and then into the supply cistern would greatly prevent furring, but we are not so sure that it would dislodge it when formed. We are much surprised to learn that the water circulates so badly in your pipes, after being only four or five years in use. We have seen pipes rather badly furred, and the material inside hard, after being thirty years in use. We think you must have a peculiar water for the pipes to be crusted inside after such a short time. It is just possible there is a considerable quantity of mud in the boiler and pipes, and emptying as stated above would relieve you of that. We almost think there must be something else wrong, as so long as there is waterway the pipes will heat. We once saw 4-inch pipes so furred that there was not a 2-inch passage, and so hard, like iron, was the incrustation that we had little faith in anything moving it, and we counselled fresh pipes. In one other case that came under our observation, the pipes were much choked up, but the incrustations were of a softer, moveable character. The owner dreaded going to the expense of new pipes, so we advised taking up the pipes, cleaning them with a wooden pole nearly their own diameter, and as the joints had been done with iron filings, instead of attempting to get them out, the collar and joint were cut, and a sliding collar put over to connect the pipes. In ordinary cases, with a little sal ammoniac put in the water, the pipes may last half a century, and scarcely show a sign of furring. It is always advisable to empty boilers at least once a-year, but the oftener the better.

Primulas after Flowering (*Emily*).—The plants will flower a second year, and should, on their going out of flower, have all the flower-stalks and any yellow leaves removed, be kept rather dry, but not so as to cause the leaves to flag much, and be set on a shelf in the greenhouse, or other light, airy position. In June they may be set out of doors in a position shaded from midday sun, and on coal ashes, so as to prevent worms from entering the pots. Keep them sparingly watered, and remove all flowers as they appear. In August repot them, removing any loose soil, or that which can be taken away without much injury to the roots, giving a moderate shift, and draining well. After potting place the plants in a cold frame, setting the pots on ashes. Water the plants moderately, and admit air freely, and they will commence flowering in September, and continue to do so up to Christmas. We do not keep the old plants, but sow in March to raise plants for autumn and winter flowering, and sow again in July for spring bloom. The plants have finer foliage and larger flowers than those kept over a year.

Fancy Pelargoniums (*E. J. L.*).—If the plants are bushy or well furnished with shoots, we would not remove the flower-buds now showing, but if they are not compact in growth pinch them. Keep the plants near the glass, with plenty of air, but safe from frost.

Planting Hollyhocks (*Idem*).—Pot them now, and defer planting out until April, hardening well off previously. They would succeed better now in a cold frame than in a greenhouse. We fear they would not do any good in the ground by the Ash tree. Give them a good rich soil in an open situation, better if sheltered from winds. Considering that you have had all the Ash roots dug up, and that the tree is to the north of the border, the Hollyhocks might do fairly, but we should give them a more suitable position if possible. A sieve of Apples is seven imperial gallons.

Selection of Grapes for a Vinery (*A Young Grape Grower*).—You do not say for what purpose you wish your selection. Alicante and Gros Guillaume are late Grapes, Trovêren Frontignan and White Nice are mid-season varieties, and of the last two we would not have more than one in a selection of twelve. We would have two Alicante instead of one, and besides the other three named, two Lady Downe's, two Bowood Muscat, two Mill Hill Hamburgh, and one Trebbiano. Mrs. Pince's Black Muscat, and Madresfield Court Muscat, are amongst the finest of late Grapes, and ought to be in every selection of such, but you have forestalled, and, therefore, limited our selection.

Camellia Buds Falling (*W. O. M.*).—We do not think the heating has anything to do with the falling of the Camellia buds. It arises from another cause—we believe from imperfect root action. We would repot them as soon as they go out of flower, or, if they do not flower, about the middle or end of March, turning them out of the pots, removing as much of the old soil as practicable from amongst the roots, picking it out with a pointed piece of wood, and preserving as many of the fresh roots as possible; drain the pots well, and pot the plants firmly in the top inch layer of a pasture, where the soil is a light loam, chopping it up rather small. Keep the soil moist, but do not make it very wet until the plants are growing freely, then water them copiously, and maintain a moist atmosphere with a moderate amount of air. We do not think the buds will fall next winter. Do not place the plants out of doors in summer, but after the buds are set keep them in a cool airy house. A house slightly shaded in summer is most suitable.

Pear Trees Infested with Scale (*C. A.*).—Your trees are suffering from scale, and we do not wonder at the absence of fruit. Unnail, or if tied loosen, the branches from the wall, and brush every part with paraffin oil. A solution of Gishurst compound, 8 ozs. to the gallon, will answer, and is not so offensive to apply. The earlier the dressing is done the better. Your trees being badly infested, it may be necessary to repeat the application next autumn after the leaves fall.

Value of Camellia fimbriata (*An Old Subscriber*).—The plant being "rather one-sided," is not worth nearly so much as if it had been symmetrical. Many would not buy it on that account, but if there are branches on that side, so that a year or two's growth would secure its becoming furnished, it is worth £20, presuming it to be in good health, and well furnished with branches.

Fruit Trees (*R. W.*).—Mr. Abbey informs us he has grown and now grows all the kinds named in his former article, and at page 85. The Apples, Pears, and Plums are grown as pyramids. They are kept closely pinched, many being 7 feet 6 inches high, and 3½ feet to 4 feet through, and this four years after planting. They have not been lifted since they were planted; the lifting he considers unnecessary, as the trees are 6 feet apart, but those of the sizes named are 9 feet apart. They are masses of flower-buds. The Pears are on the Quince stock, and the Apples on the English Paradise.

Greenhouse Plants not Thriving (*J. C.*).—The cause of the plants not thriving we should attribute, as you do, to the fumes given off by the hot-water pipes. The height of the house, we are confident, has nothing to do with it, for we have one considerably higher, and the plants thrive admirably. We think it is due to the white lead used in the preparation of the stone-coloured paint with which the hot-water pipes are coated. Nothing more is required to keep the pipes from rusting than painting with oil and a little lamp black. We should endeavour to remove the paint by wrapping them in cloths dipped in a solution of 8 ozs. of soft soap and 1 lb. of soda in a gallon of water. The pipes will need to be kept wet by the solution for at least twenty-four hours; therefore, the cloths must be watered with the solution, pouring it on them with a watering-pot. A strong solution of guano will answer the same purpose. Scrape off the paint when loose, and wash with hot water.

Leaf Soil (*Idem*).—The small grubs are common in leaf soil, and we do not think they are injurious to the roots of plants. They disappear if the leafy matter be turned over a few times, especially if the weather is frosty and dry. Place the soil under cover to dry before using it for potting.

Slow-combustion Stove.—At page 101 2*s*. 4*d*. should be 2½*d*.

Glass Gardens (*S. Gosfield*).—The writer you name must have meant Gilbey's glass orchards, manufactured by Messrs. Dennis, of Chelmsford, or glass walls. You may hear about the latter if you write to Dr. Newington, The Vineyard, Ticehurst, Sussex.

Top-dressing Potatoes (*J. B. K.*).—Apply 8 cwt. per acre of guano. Hoe the surface slightly after applying it.

Seeds from Australia (*J. H.*).—Solanum species is probably a greenhouse perennial. Sow in light sandy soil early in March, place in a hotbed, and remove to the greenhouse when the seedlings are established in small pots. Leptospermums have mostly white flowers, and are evergreen greenhouse plants. Sow in sandy loam and peat, and place in a hotbed in March. Geodia latifolia is a greenhouse evergreen shrub with yellow flowers; sow in sandy peat and loam, and place in a hotbed in March. Billardiera cymosa is an evergreen greenhouse climber; sow in sandy peat and loam in a mild hotbed in March. Stenocarpus sauignus is an evergreen greenhouse shrub, with greenish yellow flowers; sow in a hotbed in March in sandy peat and loam. Kunzea (now Metrosideros) corifolia is a white-flowered greenhouse shrub, and to be treated like the others. Prostanthera nivea is a greenhouse evergreen; sow in sandy peat and loam in a mild hotbed in March or April. Leucophyta Brownii we do not know. It is syngeneaious. Eucalyptus Stuartiana is a greenhouse evergreen tree; sow in heat in sandy peat and loam. Indigofera australis is an evergreen greenhouse shrub with pink flowers in spring; sow in peat and loam in a hotbed. Of Enchylaena sarmentosa and Erimephila longifolia we cannot advise. Hakea saligna is a greenhouse evergreen shrub; sow in sandy peat and loam in a hotbed. Pomaderris elliptica is a greenhouse evergreen shrub with creamy flowers, not unlike a Ceanothus. Elæocarpus cyanaus is an evergreen greenhouse shrub with white flowers. Callitris cupressiformis is an evergreen coniferous tree, nearly if not quite hardy; sow in heat in sandy loam. Lasiopetalum Baueri is a greenhouse evergreen shrub. This, as well as all the others, we should sow in March or early in April in sandy peat and loam, and place in a mild hotbed of 70° to 75°, keeping the plants, when up, near the glass, and when they have made two or three rough leaves pot off singly in small pots. Return to the hotbed, and keep rather close and shaded for a few days, then admit air freely, and remove to the greenhouse when hardened. Pot as the plants fill the pots with roots.

Pear-tree Insect (*A Subscriber*).—Probably it is the Slimy Grub (Selandria æthiops). It does great damage to the leaves in summer and autumn. There is not any remedy so effectual as frequent dustings of the leaves with quicklime. Lime water and a solution of soft soap have been found useful at the rate of 2 lbs. of soft soap and a peck of lime to thirty gallons of water. Tobacco water—2 ozs. of tobacco to the gallon of water—has also been found satisfactory. You could graft any of the Acers on a Sycamore. We do not know of a weeping tree that would grow on it. They are all too large for gardens, though fine for pleasure grounds.

Cyclamen Treatment (*A Constant Reader*).—Keep the seedlings in the greenhouse until June, then remove them to a cold frame; keep them rather dry, in August repot, and in September place them in a house near the glass with a temperature of 45°. They will flower next winter and spring if in good health. They are too small to flower now. If weak and poor in foliage we would encourage growth by a gentle heat, as you do the seedlings.

Statice Holfordi not Flowering (*K. M. B.*).—The cause of failure is, we think, a deficiency of heat. Your placing the plant in the stove was not, perhaps, until it had shown the spikes which from the excite-

ment consequent on the higher temperature was sufficient to cause them to fail. It will not do in a cool greenhouse, but does admirably in a warm one. Keep it near the glass, or afford plenty of light, and give no more water in winter than enough to keep the foliage fresh.

NAMES OF FRUIT (*Bolton Gardens*).—No. 1, Winter Franc Réal, a stewing Pear; 4, Knight's Monarch, a fine specimen of it, probably grown against a wall. The others we do not know. They appear to be worthless, except for stewing.

NAMES OF PLANTS (*Mary*).—We cannot name plants from leaves only.

POULTRY, BEE, AND PIGEON CHRONICLE.

THE LANCASHIRE MOONEY.

THERE is one point in connection with the breeding of Silver-spangled Hamburghs which I should like to bring before the notice of breeders and fanciers of this most beautiful variety, and that is the practical ignoring in the "Standard of Excellence," and therefore by our judges, of that sub-variety called the Lancashire Mooney. It is a well-known fact that it is from the pure-bred Mooney we get the most brilliant, the largest, and the most perfect moons or spangles, and it is equally well-known that the finest specimens as stock birds are hen-feathered, and as such are considered, according to the present standard, defective in plumage and not admissible as show birds. In "The Poultry Book," it is mentioned as a characteristic of the pure-bred Silver Mooney that they throw hen-feathered cocks, this tendency being exactly reversed in the two varieties; the Golden Pheasant and the Silver Mooney throwing hen-feathered cocks, such never being the case in the Golden Mooney or Silver Pheasant. Mr. Tegetmeier is very decided as to the propriety of having pure Mooney blood on one or other of the sides if you wish for brilliant plumage. Mr. Beldon also, I know, considers this a *sine quâ non* in the selection of stock birds; in fact, he has informed me he prefers the dark-necked cocks in every respect. Now, all this may be considered merely as a matter of taste, but it is more serious, for, as the standard is now decided, we cannot hope to see this beautiful Hamburgh brought up to that real standard of excellence.

According to the present system our judges insist on the cock having the deaf-ear opaque-white, with the tail white and spangled at the end of the feathers, the deaf-ear of the hen being also white. Now, there is no doubt such markings look very beautiful, but all breeders of this variety know the almost insuperable difficulty of obtaining a beautifully-marked cock having the deaf-ear opaque-white, one of the characteristics of the Silver Mooney being a small deaf-ear streaked with pink or red. By crossing with the Silver Pheasant we obtain exactly what we want, or rather what the judges demand, a large deaf-ear of the most beautiful milky whiteness. Whenever I see a Silver-spangled Hamburgh fowl, however beautiful his plumage may be, with a large white deaf-ear, I at once set him down as a cross between the Pheasant and the Mooney. By careful breeding by such experienced men as Mr. Beldon, the white deaf-ear and clear tail may be had on a certain per-centage of the Mooney stock, but I am afraid these are exceptional birds. Again, is it not true that we cannot get size unless with the Pheasant blood, and that the big birds, other things being equal, have the best chance in the show pen?

Some may ask, What, though we cross, and are obliged to cross, our Mooney with the Pheasant to obtain our prize birds—what harm? Simply this—these crossed birds are useless as stock birds, always throwing badly-marked pullets, which, as Mr. Tegetmeier has pointed out, will not stand the test of even one moult. Those birds ranking first in the prize list are, of course, bought up by amateurs like myself, who are not up to all the secrets of Hamburgh breeding, the consequence being a constant check to the perfect breeding of this most beautiful of all the Hamburghs. Here we have the anomaly of the best prize bird being the worst stock bird. Some experienced breeders, with the laudable desire to save the Mooney from utter extinction, breed from two yards, one for the cockerels the other for pullets; but this system must be vicious, and no crossed birds should be admitted into the prize list unless in their true character. Why cannot committees give a small prize, even a recognition, to the best hen-feathered cock, or, what would be better, to the best pen of the sub-variety—the Lancashire Silver Mooney? Let it be better known that there is a distinction between the Mooney and the Pheasant, that the small deaf-ear, stained with pink or red, a rather coarse head, and rather dark tail, mean a Lancashire Silver Mooney, and that a large deaf-ear of opaque whiteness, with a neatly-chiselled head and clear tail, can only be found in the Silver Pheasant. —JAMES MORE, M.D., *Rothwell, Northamptonshire.*

RESULTS OF POULTRY REARING.

COLOURED Dorkings are often considered very delicate. I do not find them so. Last year I hatched seventy-eight, and reared seventy-seven. I generally hatch about one hundred chickens, and I can certainly say I have never yet lost four per cent. of them. This may appear strange, but it is nevertheless true. I need not say that every care is taken of the birds. They are fed every hour from early in the morning to late at night, are never allowed to go out till the dew is off the grass, and are kept warm and very dry. The latter is very important, but not more so than not breeding from birds too closely related. I am often astonished at the great losses amongst chickens that I see and hear of, and feel confident that if the above hints were followed, very few chickens would die. I do not breed after May, as I find the chickens then are weak. My feeding is the same as is continually recommended in this Journal.—T. E. KELL, *Wetherby.*

PORTSMOUTH POULTRY SHOW.

THIS was held on the 7th, 8th, and 9th inst., and was a decided success. The following awards were made.

GAME.—*Black and other Reds.*—1, W. H. Stagg, Netheravon. 2, Capt. H. Adney, Goodworth, Clatford (Black Reds). *hc*, G. Bainton, Southsea (Brown Reds); R. Hall, Cambridge (Black Reds); W. H. Stagg. *c*, C. H. Ames, Henley (Black Reds). *Any other Variety.*—1, S. Matthew, Stowmarket (Duckwing). 2, G. Potts, Chartham (Pile). *hc*, R. Hall (Duckwing).

COCHINS (Any variety).—1, J. Watts, Birmingham. 2, J. Rogers, Hastings. *hc*, J. Pares, Postford, Guildford; C. Howard & Nichols, Peckham; J. K. Fowler, Aylesbury; H. Dent, Cosham. *c*, J. Long, Plymouth; H. Dent.

BRAHMAS.—*Dark.*—1, H. Dent. 2, J. Watts. *hc*, F. James, Peckham; H. Dent. *c*, Rev. J. Ellis. *Light.*—1 and Cup, J. R. Rodbard, Wrington, Bristol. 2, F. Crook, Forest Hill. 3, H. M. Maynard, Holmewood, Ryde. *vhc*, A. O. Worthington, Burton-on-Trent. *hc*, T. Turner; J. Pares (2); W. Masland, Milverton; F. A. Dean, Moreton-on-Lugg; F. Crook. *c*, T. Turner. (The whole class commended).

DORKINGS.—1, J. Smith. 2, Lord Turnour, Shillinglee Park, Petworth. *hc*, J. Bargeman, Dorking; J. Chesman, Rounham, Southampton.

SPANISH.—1, F. James, Peckham. 2, Howard & Nichols. *hc* and *c*, Rev. M. Rice, Bramber.

ANDALUSIANS.—1, 3, and Cup, T. Moore, Landport. 2, W. Wildey, Cosham. *hc*, E. Tonkins, St. Saviour's, Jersey.

HAMBURGHS.—*Gold-pencilled.*—1, F. Pittis, jun., Newport, Isle of Wight. 2, H. Pickles, jun., Barby. *hc*, H. Pickles, jun.; W. H. Tickner, Ipswich. *Silver-pencilled.*—1, J. King, Oxford. 2, H. Pickles, jun. *hc*, H. Pickles, jun.; J. Barter. *Gold and Silver-spangled.*—1, H. Pickles, jun. (Silver). 2, H. M. Maynard. *hc*, Mrs. Woodham, Romsey (Silver) (2); C. Windebank, Cosham; G. Potts (Silver). *c*, N. Barter, Plymouth (Silver).

FRENCH VARIETIES.—1 and Cup, W. Dring, Faversham (Houdans). 2, Rev. N. J. Ridley, Newbury (La Flèche). *hc*, Rev. N. J. Ridley (Crève-Cœur); Hill and Co., Brighton (Houdans) (3). *c*, H. S. Fraser, Liphook.

BANTAMS.—*Game.*—1 and 2, F. James. *vhc*, P. H. Jones. *hc*, J. Pares; G. E. H. Elliott, Ryde; J. W. Kellaway, Merston, Isle of Wight; C. J. Spary, Ventnor; G. Potts; G. Mante, Chichester; W. B. Jeffries, Ipswich. *c*, Master J. Stevenson. *Any variety except Game.*—1, M. Leno, Markyate Street (Laced). 2, H. M. Maynard (Black). *hc*, Lady S. Turnour, Shillinglee Park (Japanese); H. M. Maynard (Black); M. Leno (Laced); N. Barter, Plymouth (Gold-laced); J. Watts (Japanese); G. F. Hodson, North Petherton.

DUCKS.—*Aylesbury and Rouen.*—1 and 2, J. K. Fowler, Aylesbury. *hc*, Mrs. S. J. Maberley; J. Pares; A. Belcher, Dorking. *Any other Variety.*—1, F. Pittis, jun. (East Indian). 2, C. N. Baker, Chelsea (Carolina). *hc*, E. S. C. Gibson, Ryde (Mandarins). *c*, E. S. C. Gibson (Carolina); J. M. Freeman, Lymington (Brazilian) (2).

GEESE (Any variety).—1, Mrs. Ford, Shirley (Toulouse). 2, Sir H. P. De Bathe, Chichester (Sebastopol). *hc*, J. Pares (Sebastopol); G. Pittis, Wymering.

TURKEYS (Any variety).—1, Mrs. J. Mahew, Great Baddow. 2, A. Belcher, Dorking. *hc*, Mrs. M. E. Hadden, Landport (2).

ANY OTHER VARIETY.—1, J. Hinton, Warminster (Silver Poland). 2, Rev. N. J. Ridley. *hc*, C. Maggs, Melksham (Black Hamburghs); J. Pares (Japanese Silkies); A. Cruttenden, Haywards Heath (Golden); H. Pickles (Poland) (2); T. P. Edwards, Lyndhurst (White Crested Polands); P. H. Jones, Fulham (Silver Polands); C. Nicholson (Ancona). *c*, S. J. Perry, jun.

SELLING CLASS.—*Cock or Cockerel.*—1, H. Dowsett, Fleshey. 2, Rev. N. J. Ridley (Brahma). *hc*, C. F. Wilson, Totton (Silver-pencilled); G. Potts (Pile); L. W. King (Spanish); T. P. Edwards (Poland); P. W. Jones (Dorking); J. R. Rodbard (Partridge Cochin); H. Bainton (Houdan); Howard & Nichols; W. Westcott, Landport. *c*, O. W. Hoare (Light Brahma). *Hens or Pullets.*—1, H. Dent, Cosham (Cochins). 2, Howard & Nichols. *hc*, Brown & Smith, Gosport; W. Hoare (Light Brahma); H. Pickles, jun. (Poland); Capt. A. Adney (Game); J. Howard, Cosham (Dorking); M. Leno (Light Brahma); G. Murray, Purbrook (Dorking); F. James (Spanish); H. S. Fraser, Headley, Liphook (Houdans); W. Westcott. *c*, Brown & Smith; H. M. Maynard; W. Fielder, Southsea (Game Bantams).

PHEASANTS (Any variety).—1, J. K. Fowler. 2 and *hc*, M. Leno (Golden and Bohemian). *c*, J. Payne, Landport (Silver).

Extra prize for the greatest number of points in the Poultry classes.—Equal Mr. J. K. Fowler and Mr. F. James.

PIGEONS.

POUTERS.—1, E. J. Dew, Weston-super-Mare. 2, P. H. Jones. *hc*, H. Yardley, Birmingham.

BARBS.—1 and *c*, H. M. Maynard. 2, J. C. Ord, Pimlico. *hc*, H. Yardley.

CARRIERS.—1, H. Yardley. 2, H. M. Maynard. *vhc*, E. J. Dew.

DRAGOONS.—1, W. H. Mitchell. 2, J. C. Ord. *hc*, P. H. Jones; W. B. Tegetmeier, London. *c*, F. Graham, Birkenhead.

TUMBLERS.—1, E. J. Dew. 2, J. Ford, Monkwell Street, London.

FANTAILS.—1 and 2, H. M. Maynard.

ANY OTHER VARIETY.—1, S. A. Wyllie, East Moulsey (Yellow Runts). 2, W. B. Tegetmeier. *hc*, P. H. Jones (Trumpeters and Jacobins); H. Yardley. *c*, G. H. Gregory (Turbits); H. M. Maynard; W. B. Tegetmeier.

SELLING CLASS.—1, S. A. Wyllie (Yellow Priests). 2, W. B. Tegetmeier. *hc*, H. M. Maynard (Barbs); J. C. Ord (Magpies); H. Yardley; J. Watts; W. Fielder; J. Ford. *c*, H. M. Maynard (Barbs); S. A. Wyllie (Nubians); E. Barnes (Trumpeters).

Extra prize for the greatest number of points in the Pigeon classes.—H. M. Maynard.

CAGE BIRDS.

Norwich.—*Clear Yellow.*—1, W. Walters, Winchester. 2, Moore & Wynn, Northampton. *vhc*, Moore & Wynne; W. Walters; H. Apted, Broadwater. *hc*, H. Apted. *c*, T. Wiltshire; H. Apted. *Clear Buff.* — 1, W. Walters. 2, Moore & Wynn. *vhc*, W. Walters; H. Apted. *hc*, Moore & Wynn; H. Apted. *Evenly-marked or Yellow Variegated.*—1, Moore & Wynne. 2, H. Apted. *vhc*, W. Walters; H. Apted. *hc*, W. Walters. *c*, T. Wiltshire; Moore and Wynn. *Evenly-marked or Buff Variegated.*—1 and *vhc*, W. Walters. 2 and *hc*, Moore & Wynn. *c*, H. Apted.

Belgian.—*Clear Yellow.*—1, A. E. Smith, Gosport. 2, T. Moore, Fareham. *vhc*, *hc*, and *c*, O. Nicholson. *Clear Buff.*—1, A. E. Smith. 2, W. Andrews. *vhc*, *hc*, and *c*, O. Nicholson. *Evenly-marked or Yellow Variegated.*—1 and 2, O. Nicholson. *Evenly-marked or Buff Variegated.*—1 and 2, O. Nicholson.

Lizard.—*Golden-spangled.*—1, 2, and *c*, O. Nicholson. *Silver-spangled.*—1 and 2, O. Nicholson.

Goldfinch Mule.—*Jonque.*—2, W. L. Chapman, Northampton. *Mealy.*—2, Miss Dyer, Portsea. Extra 2, W. L. Chapman.

Any other Canary or Mule.—1, W. Walters (Cinnamon). 2, T. Mann, Camberwell (London Fancy). *vhc*, W. Walters (Crested Norwich); H. Apted (Cinnamon).

British Birds (Any other variety).—1, W. Walters (Dove and Blackbird). 2, O. Nicholson (Silver Starling). *vhc*, J. Jeans, Marchwood, Southampton (Piping Bullfinch); W. Sims (Starling); W. Sivyer, Portsea (Redpole). *hc*, T. Wiltshire (Goldfinch).

Extra prize for the greatest number of points in the Norwich Canary classes.—W. Walter.

Extra prize for the greatest number of points in the Belgian and Lizard Canary classes.—O. Nicholson.

Rabbits.—*Longest Ears.*—1, C. Graville, jun., Thorne. 2, C. King, St. John's Wood. *Black and White.*—1, W. Simmons. 2, G. Bainton. *Blue and White.*—1, J. Quick, St. John's Wood. 2, G. Bainton. *Tortoiseshell.*—1, C. Graville, jun. 2, G. Bainton. *Self-colour.*—1, J. Quick. 2, R. Hall. *Any other Variety.*—1, A. Clayton, Eastfield, Ryde. 2, Withheld.

Extra prize for the greatest number of points.—C. Graville, jun.

Extra prize for the best Rabbit in the Show, C. Graville, jun. Gray doe, ears 2⅜ inches long, by 5½ inches wide, eleven months old.

Judges.—*Poultry:* Mr. G. S. Sainsbury. *Pigeons:* Mr. F. C. Esquilant, Brixton. *Cage Birds:* Mr. A. Willmore, London. *Rabbits:* Mr. E. Owen, London.

WHITEHAVEN POULTRY SHOW.

This was held on the 8th, 9th, and 10th inst., and proved a very successful Show, there being upwards of 500 entries. The following is the prize list:—

Cochin-China.—*White.*—*Cocks.*—1 and 3, R. Smalley, Lancaster. 2, J Sichel, Timperley. *hc*, E. Fearon, Whitehaven (2); J. Weeks, Bootle. *c*, S. Sherwen, Whitehaven. *Hens.*—1 and Cup, J. Sichel. 2, E. Fearon. 3, G. Shrimpton, Leighton Buzzard. *hc*, R. Smalley (2); J. Sichel; J. Weeks (2). *Buff or any other Colour.*—1, J. Cowman, Whitehaven. 2, Mrs. Wilkin, Bootle. 3, Gunson & Jefferson, Whitehaven. *hc*, J. Sichel; E. Leech, Rochdale. *Hens.*—1 and Cup, J. Sichel. 2, Mrs. Wilkin. 3, E. Fearon. *hc*, Gunson & Jefferson; T. H. Green, Belfast; E. Fearon; W. G. Mulligan, Belfast; J. Sichel.

Brahma Pootra.—*Cocks.*—1 and Cup, J. H. Dawes, Moseley Hall, Birmingham. 2, J. Cowman. 3, R. Brownlie, Kirkcaldy. *hc*, J. Sichel; E. Leech; J. Dove, Coniston. *Hens.*—1, J. Sichel. 2, T. Raines, Stirling. 3, E. Leech. *hc*, T. H. Green; J. Cowman (2). *c*, J. Watts, Hazlewell Hall, Birmingham.

Dorkings.—*Silver-Grey.*—*Cocks.*—1, W. Jackson, Bolton-le-Sands. 2, Gunson and Jefferson. 3, Miss Borthwick, Maryport. *Hens.*—1, R. D. Holt, Orrest Head. 2, W. W. Ruttlidge. 3, T. Raines. *hc*, Mrs. Birkett, Workington; W. W. Ruttlidge; R. Smalley. *Dark.*—*Cocks.*—1 and 3, Gunson & Jefferson. 2, J. Fox, St. Bees. *hc*, J. White, Warlaby; S. H. Stott, Rochdale; Mrs. F. S. Arkwright, Sutton Scarsdale; Gunson & Jefferson. *Hens.*—1 and Cup, J. Stott, Healey. 2, W. W. Ruttlidge. 3, J. H. Wilson, St. Bees. *hc*, J. Robinson, Garstang; L. Patton, Taunton (2); Mrs. F. S. Arkwright. *c*, Gunson & Jefferson.

Spanish.—1 and Cup, C. W. Brierley, Middleton. 2, J. T. Hudson, Ulverston. 3, J. Watts. *hc*, W. Paterson, Langholm; H. Beldon, Goitstock; G. C. Wilson, Milnthorpe.

French Fowl.—*Cock.*—1 and Cup, H. Beldon. 2, J. Sichel (Crève-Cœur). 3, W. Boutcher, Notting Hill (Crève-Cœur). *hc*, Mrs. W. F. Wharton, Barnard Castle (Houdan); W. R. Park, Melrose (Crève-Cœur); J. W. Will, Errol; J. K. Fowler, Aylesbury. *Hens or Pullets.*—1, W. R. Park (Crève-Cœur). 2, J. K. Fowler. 3, J. Sichel (Houdans). *hc*, J. Elgar, Osmanthorpe, Newark (Houdans); R. Smalley (Crève-Cœur); J. Sichel (Crève-Cœur); J. W. Will.

Game.—*Black or Brown Red.*—*Cock.*—1 and Cup, C. W. Brierley. 2, H. M. Julian, Hull. 3, S. Beighton, Farnafield, Southwell (Black Red). *hc*, J. H. Wilson. *c*, T. Mason, Green Ayre, Lancaster. *Cockerel.*—1, 3, & Cup, Master W. Fletcher (Black Red). 2, S. Beighton (Black Red). *hc*, R. H. Campbell, Greenock (Brown Red); W. Hastwell, Whitehaven; J. W. Will. *Any other Variety.*—*Cock or Cockerel.*—1, Master W. Fletcher, Stonecrough (Duckwing). 2, H. M. Julian (Duckwing). 3, J. Sunderland, Halifax (Pile). *hc*, E. Woodburn, Ulverston; J. H. Wilson (Duckwing). *Hen.*—1 and 2, C. W. Brierley. 3, G. R. Smith, Scarborough. *hc*, T. Mason. *Pullet*—1, 2, and Cup, C. W. Brierley. 3, W. Grice, Bootle. *hc*, W. Boulton, Dalton; Master W. Fletcher; J. Masbiter, Ulverston (2); J. W. Will. *c*, J. H. Wilson.

Hamburghs. — *Golden-spangled.* — 1 and Cup, H. Beldon. 2, J. Buckley, Taunton, Ashton-under-Lyne. 3, J. Rollinson. *hc*, J. Rollinson; J. Ogden, Hollinwood; J. W. Will. *Silver-spangled.*—1, 2, and *hc*, Ashton & Booth, Mottram. 3, H. Beldon. *Golden-pencilled.*—1, W. R. Park. 2, H. Beldon. 3, C. Moore, Poulton-le-Fylde. *hc*, J. W. Will. *Silver-pencilled.*—1 and 3, H. Pickles, jun., Earby. 2, W. M. Mann, Kendal. *hc*, H. Beldon.

Game Bantams.—*Black Reds.*—*Cock.*—1, G. Hall, Kendal. 2, J. Masbiter. 3, E. Hudson, Ulverston. *hc*, J. R. Robinson, Sunderland; H. H. Thompson, Sunderland; J. T. Hudson. *Hens or Pullets.*—1, G. Hall. 2, J. W. Morris, Rochdale. 3, G. Todd, Sunderland. *hc*, G. Hall; R. Brownlie. *Any other variety except Black Reds.*—1, 2, and Cup, H. J. Nicholson, Holborn Hill, Cumberland (Duckwing). 3, W. Adams, Ipswich (Brown Red). *hc*, J. Sichel (Piles); W. Scott, Sedburgh (Duckwing); J. W. Brockbank, Kirksanton (Duckwing); Bellingham & Gill, Barnley (Piles). *c*, J. Archibald, Earlstown (Brown Red).

Bantams.—1, M. Leno, Markyate Street. 2, Mrs. F. S. Arkwright. 3, Miss B. Parker. *hc*, H. Beldon; J. Sichel; S. & R. Ashton, Mottram.

Ducks.—*Aylesbury.*—1, E. Leech, Rochdale. 2, J. K. Fowler. 3, J. Robinson. *hc*, E. Fearon; Mrs. Birkett; S. H. Stott; J. K. Fowler. *Rouen.*—1 and Cup, S. H. Stott. 2, Gunson & Jefferson. 3, W. G. Mulligan. *hc*, A. Dickinson, Distington; J. Thompson, Chocketford; E. G. Jones; W. Robinson. *c*, L. Patton; J. Fox; J. K. Fowler. *Black East Indian.*—1 and 2, S. Burn, Whithy. 3, Rev. W. Sergeantson, Acton Burnell. *Any other Variety.*—1, C. W. Brierley. 2, M. Leno (Mandarins). 3, H. B. Smith, Broughton (Shiels). *hc*, S. & R. Ashton (Carolina); S. Burn (Mandarins); H. B. Smith (Mandarins and Carolina); S. H. Stott; M. Leno (Carolina); J. Watts; T. Musgrave (Mallards).

Turkeys (Any variety).—1, E. Leech. 2, S. Sherwen. *hc*, W. Grice.

Geese (Any variety).—1, Rev. G. Hustler, Stillingfleet Vicarage. 2, S. H. Stott (Toulouse). *hc*, E. Leech. *c*, J. Logan.

Any other Variety except Bantams.—1, H. Beldon. 2, J. P. Fawcett, Whitby. 3, W. Harvey, Sheffield. *hc*, M. Nicholls, Peel, Isle of Man; J. Watts.

Selling Class.—1, R. D. Holt. 2, H. Beldon. 3, J. Cowman. 4, E. Fearon. 5, R. Smalley. *hc*, W. Cook, Hale, Carnforth (Buff Cochins); E. Fearon (White and Buff Cochins, and Black Spanish); H. Yardley; Gunson & Jefferson (2); H. Beldon; R. D. Holt (Dorkings) (2); J. H. Wilson (White Cochins and Game); E. G. Jones (Rouen Ducks); Mrs. Birkett (Buff Cochins); C. Mc.Clellan (White Cochins); W. Boulton (Brown Red Game); J. Robinson; J. Cowman (Brahmas); T. Mason (Game); J. Wilson (Black Red Game); J. Watts; J. W. Will; Mrs. F. S. Arkwright (Black Red Game).

PIGEONS.

Carriers.—1, J. & W. Towerson, Egremont. 2, E. Horner, Harewood. *hc*, H. Yardley; E. Horner; J. & W. Towerson.

Pouters.—1 and Cup for best pen of Pigeons, J. & W. Towerson. 2, E. Horner. *hc*, E. Horner; G. Sturgess, Leicester; W. Harvey.

Tumblers.—*Almond.*—1, J. Ford, Monkwell Street, London. 2, W. Harvey. *hc*, H. Yardley; E. Horner (2); J. Ford; J. & W. Towerson. *Any other Variety.*—1, J. Fielding, jun., Rochdale. 2, J. Ford. *hc*, G. Sturgess (2).

Jacobins.—1, J. & W. Towerson. 2, W. G. Easten, Hull. *hc*, T. W. Kilburn, Bishop Auckland; J. W. Edge, Birmingham; J. & W. Towerson.

Trumpeters.—1 and 2, E. Horner. *hc*, H. Beldon.

Barbs.—1 and *c*, H. Yardley. 2, J. & W. Towerson. *hc*, W. Jackson; J. Fielding, jun.; G. Goore; J. & W. Towerson.

Turbits.—1, W. G. Easten. 2, J. & W. Towerson. *hc*, H. Yardley; E. Horner. T. W. Kilburn; J. & W. Towerson.

Owls.—1, H. Beldon. 2, J. & W. Towerson. *hc*, J. Armstrong, Workington; T. W. Kilburn; J. & W. Towerson.

Fantails.—1, E. Horner. 2, H. Beldon. *hc*, H. Yardley; J. W. Edge.

Dragoons.—1, H. Beldon. 2, J. W. Edge. *hc*, W. H. Mitchell, Moseley, Birmingham; J. Watts; G. South, New Bond Street, London; W. Harvey.

Any other Variety.—1, H. Beldon. 2, W. Jackson. *hc*, H. Yardley; T. W. Kilburn; J. Watts; J. Fielding, jun.; W. Harvey.

Selling Class.—1, J. W. Towerson. 2, W. R. & H. O. Blenkinsop. *hc*, J. and W. Towerson; Mrs. F. S. Arkwright (Antwerp and Dragoons); J. W. Edge. *c*, H. Beldon.

Cup for the most successful exhibitor.—Messrs. J. & W. Towerson.

Canaries.—*Belgian* (Yellow).—1, J. N. Harrison, Belper. 2 and *c*, W. Robinson, Workington. *hc*, D. Tweedie, Whitehaven. (Buff).—1, J. N. Harrison. 2, P. Watson, Whitehaven. *hc*, S. Sherwen. *Mules* (Buff).—1, R. Hawman, Middlesbrough. 2, R. Carr, Carlisle. *hc*, J. Harkness, Whitehaven. *Piebald* (Yellow or Buff).—1, J. N. Harrison. 2, Stevens & Burton, Middlesbrough. *hc*, R. Carr. *c*, R. Hawman. *Lizards* (Gold or Silver-spangled).—1, R. Hawman. 2 and *c*, Stevens & Burton. *hc*, J. N. Harrison.

Judges.—*Poultry:* Mr. R. Teehay, Fulwood, Preston; *Pigeons, Ducks, Geese, and Turkeys:* Mr. J. Dixon, North Park, Bradford; *Canaries:* Mr. A. Benson, Whitehaven.

CRYSTAL PALACE BIRD SHOW.

For the information of those readers of the Journal who may be looking for some report of the Show which is now open and will remain so till Friday, I pen a few hasty notes while waiting for the train, promising to supplement them at length next week. Taking the Show as a whole, it is one of great merit. The Clear Jonques and Mealies are in many instances, and notably so in the case of the winning birds, of extraordinary merit. Mr. Walter is once more at the top of the tree in Jonques with a splendid bird, and Mr. Mackley second with a remarkable specimen, which ought to have been disqualified, being Ticked, and consequently entered in a wrong class. The third is a fair bird, but I think I could name more than one which I prefer. Among the unmentioned division stands Mr. Judd with six excellent Jonques.

The Clear Buffs constitute a superior class, the first four being rare birds, full of colour and bloom. Mr. Mackley shows two which are equal third, and one of them is about as good as anything in the class. Each was soon claimed at the low price of £1. No. 73 is a good bird, and so are 68, 97, and 81.

In the Evenly-marked Jonques Mr. Hawman's bird stands unapproached. Adams & Athersuch are second with a remarkably neat hen, and one of the equal thirds also is a hen, the third honour being shared by Moors & Wynn and Smith & Preen, a Coventry firm. Nos. 114, 118, and 120 well merit their cards. Walter, Adams & Co., and Moore & Wynn share the honours in the Even-marked Buffs with very fine birds in close company.

The Ticked Belgians are, many of them, superb. Nos. 175 (Mackley), 184 (Moore & Wynn), and 177 (Bemrose & Orme), among the Jonques are enough to make anyone's mouth water and create a longing for that jonque mineral, of which a liberal supply is required to enable one to become their purchaser.

In Ticked Mealies Mr. Havers is first with 230, all quality: but it is a very near thing between it and the second (No. 242, Walter). Messrs. Toon & Cleaver are third with a very rich bird, and all the mentioned specimens are meritorious.

The crests are a great improvement on last year, and the Buffs well deserve the comment of the Judges, which is appended to the return list, "A splendid class." There are some magnificent birds among them. No. 283, first Buff (Mackley), is full of good Norwich points, and with but few exceptions most of the birds are well worth a careful inspection.—W. A. Blakston.

Owing to the excessive dryness of last spring great difficulty was experienced in rearing young birds, added to which the importations from Germany and France have, during the last six months, entirely ceased, and fears were entertained as to the success of a bird Show under such disadvantages; but it is evident that no apprehensions of the kind need have been entertained. The entries are nearly if not quite as numerous as on former occasions, while the quality, for which the show of last year was so famous, is maintained in the present instance. Canaries are always strong, and especially the Norwich birds. Next come the Belgians; although there may be many points of interest about them which render them attractive to exhibitors, yet they cannot either as to appearance or symmetry of form be compared to the Norwich classes. Mules are always good, and so are the London Fancy.

The following are the number of birds exhibited :—

	No. of birds.		No. of birds.
Norwich Classes	327	Brought forward	629
Belgians	35	Aviaries (14)	84
London Fancy	32	British Birds	147
Other Classes	148	Foreign Birds	19
Mules	87	Miscellaneous	187
Carried forward	629	Total	1146

NORWICH (Clear Yellow).—1, W. Walter, Winchester. 2, R. Mackley, Norwich. 3, W. Cooke, Norwich. *vhc*, R. Mackley; T. Irons, Northampton; Cockle & Watson; W. Walter. *hc*, Bemrose & Orme, Derby; S. Bunting, Derby; Smith & Preen; T. Fenn, Ipswich; Adams & Athersuch, Spon End, Coventry. *c*, R. Mackley (5); S. Bunting; Moore & Wynn, Northampton (2); W. Havers, Norwich; J. Judd, Newington Butts (2); T. Mann, Camberwell.

NORWICH (Clear Buff).—1, Toon & Cleaver, Kettering. 2, W. Walter. Equal 3, R. Mackley (2). *vhc*, Bemrose & Orme; S. Bunting; W. Walter. *hc*, Moore and Wynn; Bexson & Bennett, Derby; Adams & Athersuch; W. Cooke; J. Doel, Stonehouse, Devon. *c*, Bemrose & Orme (2); Moore & Wynn; Adams and Athersuch (2).

NORWICH (Marked or Variegated Yellow).—1, R. Hawman, Middlesbrough. 2, Adams & Athersuch. Equal 3, Moore & Wynn; Smith & Preen. *vhc*, S. Bunting; Smith & Preen; J. Judd. *hc*, W. Havers; Bexson & Bennett. *c*, J. G. Stephenson, Bishop's Cleeve, Cheltenham; T. Irons; Moore & Wynn; W. Havers; Bexson & Bennett; T. Fenn.

NORWICH (Marked or Variegated Buff).—1, W. Walter. 2, Adams & Athersuch. 3, Moore & Wynn. *vhc*, R. Mackley; Moore & Wynn (3); W. Walter. *hc*, R. Mackley; Bemrose & Orme; S. Bunting; Bexson & Bennett; T. Fenn; J. Judd. *c*, G. Gayton, Northampton; T. Fenn; J. Judd; J. Marshall, Derby; W. Cooke.

NORWICH (Ticked or Unevenly Marked Yellow).—1, R. Mackley. 2, Moore and Wynn. 3, Bemrose & Orme. *vhc*, Smith & Preen; Cockle & Watson; W. Walter; T. Mann. *hc*, R. Mackley; S. Bunting; Smith & Preen; Bexson and Bennett; T. Fenn; T. Newmarch, Crystal Palace. *c*, R. Mackley; W. Walter; P. Flexney, London; E. W. Lulham (2).

NORWICH (Ticked or Unevenly Marked Buff).—1, W. Havers. 2, W. Walter. 3, Toon & Cleaver. *vhc*, Bemrose & Orme; Moore & Wynn; W. Walter; Adams & Athersuch. *hc*, R. Mackley (3); Bemrose & Orme; Cockle & Watson, Terrington St. John; Bexson & Bennett; W. Walter. *c*, S. Bunting; Moore and Wynn; W. Havers; T. Newmarch; E. W. Lulham, Brighton.

NORWICH (Crested Yellow).—1, T. Fenn. 2, Toon & Cleaver. 3, Bemrose and Orme. *vhc*, T. Irons (2); Moore & Wynn; R. Hawman. *hc*, H. Apted, Worthing; Moore & Wynn (2); T. Fenn; G. Cox, Northampton. *c*, Bexson and Bennett; T. Fenn; W. Walter; J. Tarr, London.

NORWICH (Crested Buff).—1, R. Mackley. 2 and 3, Moore & Wynn. *vhc*, R. Mackley; Moore & Wynn (2); W. Havers; H. N. Fosbrooke, Hatfield, Doncaster. *hc*, Moore & Wynn; Smith & Preen; Bexson & Bennett. *c*, R. Mackley; H. Apted; Bexson & Bennett; J. Judd; W. Walter; J. Goode, Leicester.

BELGIAN (Clear Yellow).—1, J. N. Harrison, Belper. 2, J. Poole, Sutton-in-Ashfield. 3, J. Doel. *vhc*, C. Carver, Lamport; J. Close, Derby; J. Doel. *hc*, W. Walter.

BELGIAN (Clear Buff).—1, J. Doel. 2, J. Poole. 3, C. Carver. *vhc*, G. Tuckwood, Nottingham; W. Walter. *hc*, W. Harley; J. Doel.

BELGIAN (Variegated or Ticked Yellow).—1 and 2 J. Doel.

BELGIAN (Variegated or Ticked Buff).—1, Withheld. 2, W. Harley.

LONDON FANCY (Jonque).—1 and *hc*, W. Brodrick. 2, 3, *vhc*, and *hc*, J. Waller. *c*, T. Clark, Sutton, Surrey.

LONDON FANCY (Mealy).—1, *vhc*, and *hc*, J. Waller. 2 and 3, W. Brodrick. *c*, T. Clark.

LIZARD (Golden-spangled).—1, H. Ashton, Polefield Hall, Prestwich. 2, J. Judd. 3, T. W. W. Fairbrass, Canterbury. *vhc*, R. Mackley; G. Tuckwood (2). *hc*, G. Harrison; J. Poole; T. W. W. Fairbrass; W. Dann, Nottingham; T. Clark. *c*, J. N. Harrison; J. Poole; T. W. W. Fairbrass; T. Clark.

LIZARD (Silver-spangled).—1, H. Ashton. 2, R. Mackley. 3, S. Bunting. *vhc*, J. Poole; Adams & Athersuch; H. Ashton. *hc*, J. N. Harrison; G. Harrison. *c*, G. Harrison.

CINNAMON (Jonque).—1, T. Irons. 2, S. Tomes, Northampton. *vhc*, G. Gayton, Northampton; H. J. Ims, Bloomsbury; S. Tomes. *hc*, T. Irons; J. Spence, New Hendon, Sunderland; C. W. Hooke, London; Moore & Wynn. *c*, S. Bunting; T. Irons.

CINNAMON (Buff).—1, J. Waller, London. 2, W. Gamble. *vhc*, T. Irons; H. Apted; W. Gamble. *hc*, Moore & Wynn (2). *c*, T. Irons; W. Walter (2); J. H. Hadland.

CINNAMON (Marked or Variegated).—1, Bemrose & Orme. 2, S. Tomes. *vhc*, H. Apted. *hc*, Moore & Wynn; J. H. Hadland, Wallington. *c*, P. Rawnsley, Ledget Green, Bradford; H. Apted; Moore & Wynn.

ANY OTHER VARIETY.—1, H. Ashton (Manchester Coppy). 2, E. Stansfield, Bradford. 3, J. Baxter, Newcastle (Glasgow Fancy). *vhc*, J. Judd (Manchester Crested Coppy and Manchester Coppy). *hc*, P. Rawnsley; Moore & Wynn (2) (Crested Cinnamon); R. Hawman (Yorkshire). *c*, T. Newmarch.

GOLDFINCH MULE (Yellow).—1, J. Doel.

GOLDFINCH MULE (Buff).—1, H. Ashton. 2 and *hc*, J. Doel.

GOLDFINCH MULE (Variegated Yellow).—1, H. Ashton. 2 and 3, J. Doel. *vhc*, W. B. Bailey, Purfleet; H. Ashton (2); J. Doel. *hc*, H. J. Ims.

GOLDFINCH MULE (Variegated Buff).—1, Fairclough & Howe, Middlesbrough. 2, J. Doel. 3, J. Baxter. *vhc*, H. J. Ims; W. B. Bailey; J. Doel (3). *hc*, S. Bunting; H. J. Ims; H. Ashton. *c*, Rev. V. Ward, Hythe; H. J. Ims.

GOLDFINCH MULE (Dark Jonque).—1, E. Stansfield. 2, R. Hawman. *vhc*, S. Bunting; Moore & Wynn (3). *hc*, J. Cooper, Penge. *c*, T. Willsher, Chichester; T. E. Fosbrooke, Carlton Hills, Leeds; W. B. Bailey.

GOLDFINCH MULE (Dark Mealy).—1, W. L. Chapman. 2, W. Smith. *hc*, E. Stansfield; J. Cooper; W. Dann, Nottingham.

LINNET MULE.—1 and *vhc*, J. Spence. 2, H. Ashton. *c*, W. Few, Forest Hill.

MULES (Any other variety).—1, W. Yeoman, Leeds (Bullfinch and Canary Mule). 2, E. Stansfield (Bullfinch and Goldfinch Mule). 3, H. Ashton (Linnet and Bullfinch Mule). *vhc*, E. Stansfield (Bullfinch and Goldfinch Mule); T. Irons (Black and White Goldfinch Mule); J. F. Cookson, Preston (Goldfinch and Greenfinch Mule); W. Verner, Brighton (Linnet and Bullfinch Mule); H. Ashton (Goldfinch and Bullfinch Mule). *c*, G. Locke (Linnet and Goldfinch Mule).

NORWICH (Cage of Six, irrespective of Colour).—1, 2, and 3, W. Walter. *vhc*, Moore & Wynn; T. Fenn; W. Cooke.

BELGIAN (Cage of Six, irrespective of Colour).—1, Withheld. 2, C. Carver.

LIZARDS (Cage of Six, irrespective of Colour).—1, H. Ashton. 2, Clark and Hooke.

GOLDFINCH MULES (Cage of Six).—1, J. Doel. 2, H. Ashton. 3, E. Stansfield. *vhc*, J. Doel. *hc*, H. J. Ims.

MISCELLANEOUS.—Prize, J. Baxter (Black Goldfinch Mule).

BRITISH BIRDS.

BULLFINCH.—Prize, R. Mackley. *hc*, A. Webster, jun., Kirkstall, Leeds; J. Judd. *c*, Moore & Wynn; W. Walter; T. Willsher.

GOLDFINCH.—Prize, J. Doel. *vhc*, Moore & Wynn. *hc*, G. Cox; J. Doel. *c*, Fairclough & Howe; J. Spence.

LINNET.—Prize, J. Baxter. *hc*, H. Green. *c*, G. T. Harrison; Fairclough and Howe; J. Baxter.

SKYLARK.—Prize and *hc*, J. S. Benton, Rochester. *c*, J. Judd.

WOODLARK.—Prize, W. Walter.

ROBIN.—Prize, G. Cox. *c*, W. J. Walling, London.

BLACKBIRD.—Prize, Miss M. A. Robinson, Sydenham. *hc*, J. Judd. *c*, W. Walter.

SONG THRUSH.—Prize, J. S. Benton. *hc*, A. Raven, Norwood. *c*, J. W. Smyth, London.

STARLING.—Prize, J. Judd.

ANY OTHER VARIETY OF BRITISH BIRDS.—Prize, T. Newmarch (Mealy Bullfinch). Prize, W. Walter (Dove-coloured Blackbird). Prize, G. Cox (Yellow-hammer). Prize, J. W. Gessey (Chaffinch). *c*, A. Webster, jun. (Bramblefinch); H. Ashton (Cinnamon Goldfinch).

BIRDS OF PASSAGE AND MIGRATORY BIRDS.

BLACKCAP.—Prize and *hc*, A. Rettich, Peckham.

SISKIN OR ABERDEVINE.—Prize, R. Mackley. *hc*, J. Baxter; T. Willsher. *c*, J. Judd.

ANY OTHER VARIETY.—Prize withheld. *hc*, W. Walter (Tree Sparrow).

FOREIGN BIRDS.

COCKATOO (Lemon or Orange-crested).—1 and 2, M. George, London.

COCKATOO (Leadbeater or Rose-breasted).—1, Mrs. Astley, Prince's Risborough. 2, T. Newmarch. *vhc*, W. B. Bailey; J. Judd.

COCKATOO (Any other variety).—Prize, W. B. Bailey (Slender-billed).

PARROTS (Grey).—1, J. G. Wingrove, Purfleet. 2, H. Webster, London. *hc*, Mrs. Ramsay, Brixton. *c*, J. Judd.

PARROTS (Green or any other variety of large, except Grey).—1, J. Judd (Green Parrot). Equal 2, W. B. Bailey. Equal 2, and 3, T. Newmarch (Bulla Bulla and Mealy Rosella). *vhc*, H. Jenner, Camberwell (Green Parrot); W. B. Bailey (Bulla Bulla and Rock Peblar). *hc*, J. Battershill, London (Rosella).

LOVE BIRDS.—Prize, W. B. Bailey. *vhc*, W. Walter. *hc*, J. Judd.

PARAKEETS (Australian Grass).—Prize and *vhc*, J. Judd. *hc*, T. Newmarch.

PARAKEETS (Ring-necked or Bengal).—Prize, T. Newmarch. *vhc*, T. Newmarch; P. L. Heisch, Chelsea. *c*, W. Underwood.

SMALL PARROTS OR PARAKEETS (Any other variety).—Prize, W. B. Bailey (Blue Mountain Lorykeet). *hc*, J. Judd (Turquoisenes).

COCKETEALS.—Prize, T. Newmarch. *vhc*, J. Judd. *hc*, W. Walter.

SPARROWS.—*Diamond.*—Prize, W. B. Baily. *vhc*, T. Newmarch. *hc*, J. Judd. *c*, T. Newmarch. *Java.*—Prize, J. Judd.

ANY VARIETY OF WAX BILLS.—Prize, J. Judd. *vhc*, W. B. Bailey.

CARDINAL.—Prize, W. B. Bailey. *c*, E. Sweeting, Sydenham.

ANY OTHER VARIETY OF FOREIGN BIRDS.—1, T. Newmarch (Java Mina). 2, W. Walter (Madagascar). 3, J, Doel (Saffron Finch). Extra, W. B. Bailey (Collection of Foreign Birds). *vhc*, W. B. Baily (Yellow Weavers); T. Newmarch (Nonpareil); C. A. Stein (Brouze Manaskins). *hc*, W. B. Bailey (2) (Parson Finch and Collection of Foreign Waxbills); W. Walter (Saffron Finch).

JUDGES.—*Canaries:* Mr. Barnesby, Mr. Moore, and Mr. Wilmore. *British and Foreign Birds:* Mr. John Jenner Weir, F.L.S., and Mr. Harrison Weir, F.R.H.S., assisted by Mr. F. W. Wilson.

PRIZE LISTS FOR CARRIER PIGEONS.

I HAVE no doubt committees often class Carriers in pairs, believing that they cannot afford to give prizes for two classes; this is a great mistake—two classes pay better than one, for the very reason that Colonel Hassard gives—viz., "that, as a rule, no fancier breeds from two Blacks or two Duns," consequently they are very seldom paired fit for exhibition. It is sometimes very difficult to mate Carriers as you wish them to breed (I think they are the worst of any Pigeons in this respect), and fanciers cannot afford to undo what has given them so much trouble, and in addition risk a battle with two valuable birds that carry such formidable weapons as their beaks. Last summer a large cock I had came in contact with a very promising young hen that was strange to him, and he scalped her as cleanly as any American Indian could have done, and had I not entered the loft in time would have destroyed her eyes; as it was, she could not see with one eye for weeks afterwards.

In consequence of these difficulties all shows where Carriers are classed in pairs suffer both in quantity and quality; and more especially after this date, when the birds are mated for breeding they will scarcely get a class worth notice, except one or two pens belonging to persons who buy birds to exhibit and not to breed.

As facts are convincing, I give the results of Carrier entries at a few shows held during the past season.

		No. of Entries.	Entry Fees. £	s.	d.	Prizes given. £	s.	d.
Oakham	shewn in pairs	4	0	14	0	1	10	0
Ipswich	" "	9	1	7	0	1	2	6
Leeds	" "	10	1	10	0	1	10	0
Long Sutton	single birds	58	8	14	0	8	5	0
Lowestoft	" "	41	4	2	0	3	0	0

Now, as the great desire is to get a good show as well as one that will meet expenses, it is evident that single birds answer the two purposes best, for while Oakham, Ipswich, and Leeds had only entries numbering respectively four, nine, and ten, Long Sutton and Lowestoft obtained fifty-eight and forty-one entries, and the entry fees pay the prize money—an important point for committees to study. A class for young Carriers pays best of all. London, Long Sutton, and Lowestoft offered prizes for young Carriers at their last shows, and received good entries—London thirty pens, Long Sutton twenty-two, and Lowestoft fourteen. Ipswich also, although the birds were shown in pairs, was confined to birds of 1870, and it shows a better result financially than either Oakham or Leeds.

I believe Carrier-fanciers are increasing, and I think I am not wrong when I say there are more good birds in the kingdom than ever, and if committees will only properly arrange their Carrier classes by giving prizes for cocks and hens separately, and a class for birds under one year (single bird, either

cock or hen), they will have good birds, and in such numbers as will pay them.—L. Wren, *Lowestoft.*

IS THE RABBIT FANCY ON THE DECLINE?

Mr. Gooding's able reply goes to strengthen my remarks as to the great scarcity of Lop-ears owing to their being so difficult to breed, and on account of their greater value they ought to occupy the front rank in a Rabbit show. The very reason that we had so many entries of fancy Rabbits at York was their being so common, so easily bred, and of so little value. The pair of Angoras that won the first honours at the York Show belonged to two poor lads who stand in our market with a few Pigeons and common Rabbits. The forty-five Lop-eared Rabbits entered at our show belong to thirty good Rabbit fanciers whose names are household words amongst us; but out of the forty-five fancy Rabbits entered, there were not a dozen good fanciers' names, the majority belonging to lads whose names are unknown amongst the fancy. The fancy-Rabbit men are able to make a dozen or more entries in a show, for such Rabbits are so easily procured and breed so fast that their owners are able to enter largely; but the Lop-eared fanciers have to be content by entering from three to six or more, generally one. There is no comparison between the two in value. I had at one time ten Rabbits, which I valued at £100, and I could have sold them for that sum, and I very much question if there is a fancy variety dealer in the country who has a stock to amount to anything near that sum, and who can count his stock by from forty to sixty.

I am of opinion that, taking the country throughout, the fanciers of Rabbits are on the decline. I include fanciers of all varieties. I should delight to see the day when Rabbits were placed on the same footing as the other fancies which compose our shows. It cannot but be admitted that at present, with committees, Rabbits are either left out altogether or very meagrely represented. Can we expect, so long as this neglect continues, that the fanciers of Rabbits will increase?

The question, then, arises, How are Rabbits to be raised to an equal position with poultry and Pigeons? I think that it can only be done by fanciers sinking all differences and jealousies, and uniting into an association that will recommend the fancy to the public at large, and to committees of poultry shows in particular. Since throwing out a hint about the formation of a United Kingdom Rabbit Club, I have had letters from many influential fanciers wishing such a Club to be formed and carried out. My idea is for the Club to be formed upon the following basis—

That it be composed of Rabbit fanciers, to become members by subscribing 1*s.* annually. That a city or town be chosen as the head quarters of the Club. That a committee be chosen out of every town at the rate of one committeeman to every four members. That an unpaid secretary be appointed to do the work well for the love of the fancy. That the secretary keep a register not only of members, but of every known fancier in the kingdom. That the members keep the secretary well supplied with information—anything that is interesting to the fanciers. That the secretary correspond with every poultry-show secretary prior to the schedule being issued, to suggest classes, and, where no Rabbits have been exhibited, to use his influence to have such classes established; also to keep up a continual correspondence with secretaries of local clubs. The secretary to be a well-known fancier, one to whom any new beginner can apply for information and advice as to the management of Rabbits.

I would expend any surplus funds by holding a "grand Rabbit show" successively in different towns.

By the formation of such a Club, if it were well worked, I believe the fancy would increase and revive, also a tone would be given to it which it does not at present possess. If this meets the approval of all fanciers I am willing to set the Club going, and when established the committee can appoint a secretary.—M. Millington, *York.*

EXAMINING STOCKS.

The period is approaching when scientific apiarians will be taking advantage of a fine day for the purpose of inspecting their hives, and ascertaining how they have fared during the late protracted frost, which, with only one short intermission, extended over seven weeks. Some that were weak and not well supplied with stores will be found to have succumbed to the severity of the season; others that were strong and well provisioned, and prepared for winter's storms, will be seen to have sustained little or no injury. We should profit by experience—our very errors are good teachers—and when we find anything in our practice that has been faulty and followed by evil consequences, our wisdom is not to repeat our mistakes.

The desire to know the condition of our hives is liable to be gratified at some expense when proper precautions are not taken, as I learned to my cost nearly twelve months ago. About the beginning of March the weather happened to be cold and ungenial, but the 16th was calm; and although no bees were going abroad I concluded it would be quite safe to make an examination of one of my stocks, and that, as the temperature was over 40°, no harm could come to the brood from a short exposure of the frames in the open air. This conviction, as the result showed, was well founded, but it did not occur to me that the carrying out of my intended inspection might be the occasion of serious loss to an adjoining stock not more than 3 feet removed—a distance, by the way, far too small for the separation of hives, seeing they ought to be placed as far apart as circumstances will permit. Without, therefore, feeling any concern for the safety of my other stocks, I proceeded at once to remove the crown board and elevate the frames; but whilst holding them up to view a number of bees flew off and soared into the air. These fugitives, I imagined, would return by their accustomed entrance to their homes, but instead of doing so they seemed bewildered, and several went directly into the hive located nearest their own. This showed me the propriety of suspending operations, so after adjusting the frames I shut up the hive as quickly as possible. I need hardly say that I was apprehensive of consequences, but as the stock receiving the stray bees remained perfectly quiet throughout the remainder of the afternoon, my equanimity was not much disturbed.

I felt, however, that an error had been committed, and next day, when reflecting on the matter, I thought it would be prudent to make an investigation, and see whether the stragglers which had entered a strange dwelling without opposition were keeping the peace in their new home. Accordingly, after employing precautions that had been neglected on the previous day, I commenced operations in the usual manner. A glance showed that all was not right. The inhabitants evidently were in a state of commotion, and that peculiar sound could be heard which is emitted whenever a queen is encased. I had not to search long before I discovered that my worst fears were realised, but the rescue intended on my part came too late. The queen was found in the very heart of a compact ball of regicides and hopelessly injured, her body being already rigid and shrivelled. Her deliverance and death was almost simultaneous. Now, if a friend having a spare queen had not come to my aid, this stock, losing its sovereign so early as the middle of March, must have been utterly ruined, and it is to put others on their guard that I am induced to state my experience.

Bees, as is well known to observers, go out from their habitations after long confinement in the same manner as from a young colony. They do not fly off directly, but make two or three circles, so as to enable them to become acquainted with the place they have left and avoid making any mistake on their return; consequently if they have been kept within-doors for some time they should have an opportunity of reconnoitering their entrances before any attempt is made to open up their hives, otherwise, as in the case mentioned, they may take advantage of the situation and fly off from the frames, and ignorantly or stupidly enter the homes of their neighbours for their own. But when a stock is to be examined early in spring, all danger may be avoided by shutting up the entrances of hives which are near to it with perforated zinc, or, what is more convenient, wetting them with carbolic acid. In the one case stragglers cannot enter a wrong dwelling, and in the other they dare not. As the life of the queen is the most valuable life in the hive and essential to its existence, nothing should be done which is calculated to put her precious person in peril. Bee-masters, then, would do well to beware in early spring, and before the season is advanced, of a practice which is sometimes resorted to for the purpose of strengthening a weak colony—viz., that of putting it on the stance of a strong one. By making two stocks exchange their stances at an improper season both stocks may be lost through their queens being imprisoned and killed.—R. S.

OUR LETTER BOX.

Books (*H. Browne*).—"Poultry Book for the Many," for seven postage stamps. "Poultry-keeper's Manual," free by post from our office for sixty-four postage stamps.

Keeping Poultry as an Employment (*H. H.*).—Your question is a difficult one to answer. Few men can live by poultry alone. To keep it profitably requires a thorough knowledge of the subject, and, trifling though it appear, there is no royal road to it. All the theory may be learned from books, but much can be only gained from experience. In poultry, as in everything else, that must be bought. If your friend is about to breed and send the ordinary poultry, and fatten it only as it is fattened in Ireland, we should advise him to send it to Liverpool; if he means to make it good enough for the London market, let him send it there. He must choose his season. In the hot weather much pains and care are required in fattening, fasting, killing, and packing to enable it to reach its destination in a fit state to realise a good price. Advantage must also be taken of the time of year. Poultry is most valuable in London in April, May, and June. Irish chickens well killed will make good prices during those months, but they must be chickens in age as well as name. It would be necessary he should choose a good breed, as the ordinary Irish chickens with black, blue, and yellow legs eat as much

as better-bred birds, and do not make as much. We do not think he would be wise to give up a permanent employment for poultry-keeping, but we would advise him to begin with a few. He will gain experience, and will see how far it will answer. No man in the ordinary trade can breed enough to live by it, he must collect from the surrounding country. He will have to buy them in lean and to fatten them. This renders it necessary to keep a horse and cart, and a cow. Good poultry cannot be made without milk. If your friend could get into relation with some man at the nearest seaport and sell to him, it would probably be the best thing he can do, as it will reduce his venture to a certainty. We believe poultry will be found a valuable adjunct; but knowing as much as we do on the subject, we do not advise anyone to give up a permanent employment to take to poultry.

Silver-spangled Hamburghs' Combs (*C. M. M.*).—It is most difficult to breed prize cocks and hens from the same stock. It generally takes two yards to do it. The hollows in the combs are serious defects, and would disqualify from a first prize with any really first-rate judge. We would not breed from a cock with such a defect.

Breeding Black Hamburghs (*Baron*).—They are bred in all the ways you mention. We like a Spanish hen and a dark Yorkshire black-breasted Golden-spangled Hamburgh cock. In whatever way you breed them, you have to breed out one point and increase another afterwards.

Crooked-breasted Cock (*J. S. Z.*).—You should tell us the breed of your bird. In a Game cock we would not suffer a deviation from the straight line in the breastbone. In birds of weight we should not be so particular, but if we had a perfectly straight-breasted one we would discard the crooked were it ever so trifling.

Fowls for Laying (*A Subscriber*).—Crêve-Cœur, Houdan, or Spanish; we think the first.

Breed of Hen (*G. E. A.*).—We have little doubt that the hen in question is a Crêve-Cœur. Your description tallies with that of the breed. Rub the bare place on the neck with compound sulphur ointment.

Silver-pencilled Hamburghs (*A Subscriber*).—There are two pencillings to be avoided; one so faint as to be indistinct, the other so very dark and pervading, that it forms blotches; this is called mossy. Hamburghs should not be thick and squat, but rather taper in shape and form. The comb should be a well-defined double comb with a pike at the back turning upwards. It should be full of points, have no hollow in the centre, and be fixed firmly on the head, inclining to neither side. No other comb is admissible. A Guinea Fowl has no comb, it has a knob. Choose the birds that are nearest to our description.

Fowls Losing Head and Neck Feathers (*F. T., Exon*).—It is probable your fowls peck each other's feathers. Rub the bare spots with compound sulphur ointment. It is probable as the weather changes, if your fowls have a grass run, they will discontinue the practice. If they have not, you must supply them with sods of growing grass cut with plenty of mould, and with green stuff of some kind. Generally when fowls eat each other's feathers, it is because they lack something necessary to their well-being, and feathers are a substitute.

Hen Dropping her Eggs (*C. M. S.*).—The hen drops her eggs because she is out of condition. You can prevent her dropping them by removing the perches, or you can save the eggs by putting hay or sawdust under the perches. You do not overfeed, but we advise you to substitute barley-meal for barley, and whole maize for ground. We do not think you have any right to complain of the laying. From three hens in fifteen days you have twenty-two eggs in very bad weather; each hen laying every alternate day would produce the number, and that is an excellent average. If you were to add those dropped from the perch, and thereby lost, we believe you have done better than your neighbours.

Hardiness of Hamburghs (*Henricus*).—We believe the Golden Hamburgh of both varieties to be hardier than the Silver, and the Spangled hardier than the Pencilled. Birds should not be sent out in a deplorable state.

Shooting Stray Fowls (*Ridiculus Mus*).—Your neighbour will act illegally if he shoots your fowls which invade his garden, but he may sue you in the County Court for the trespass.

Swindlers (*G. G.*).—The parties you name at Walham may be swindlers, and we will communicate with the police. Buyers and sellers of poultry need never be swindled if they would adopt the caution we have so frequently urged.

Portsmouth Show (*W. T. S.*).—The Secretary ought to return your money if he did not send you a catalogue. The post office may be to blame. The Judge was competent, and no one can say fairly "My birds ought to have won," unless he first sees those with which they competed.

Wry-tailed Game Cock (*Brown Red*).—Do not breed from him if a natural deformity. It is hereditary.

Pigeon not Eating and Injured by a Shot (*H. Prince*).—If there is any life in your bird it would eat hempseed, which would do it good. Most probably, as it cannot eat, not the wing only but the body of the bird was injured, and by this time it is dead. If alive, bathe with warm water first, and after the skin is well healed a very mild solution of iodine would strengthen it.

Bee Management (*T. H. T.*).—"Bee-Keeping for the Many," which may be had by post direct from this office for five stamps. If you erect a shed let it be a lean-to against a wall facing any aspect from south-east to south-west. It should be closed at the ends, but either entirely open in front, or covered only with pheasant wire, with a good-sized semi-circular opening opposite the entrance to each hive, and should be of sufficient width to admit of all operations being conducted at the back. If you mean to go in for mere ordinary bee-keeping, use only the common cottage hive; if for the depriving system, adopt flat-topped straw hives and supers, such as the "economic hive" which will be described next week, or Payne's improved cottage hive; if for scientific and experimental bee-keeping, you had better go at once to the Woodbury frame-hive.

Death of a Queen (*A Novice*).—The loss of a queen at this season is an irretrievable misfortune. The remaining bees should be at once expelled by driving, and united to the nearest stock, whilst the contents of the hive may either be appropriated by the bee-keeper, or the whole carefully put by intact in a safe place to be again tenanted by a swarm in due season.

Transferring Bees (*G. Cummings*).—No attempt at transferring bees should be made until the hive becomes well populated—say towards the end of April, or during the month of May, according to circumstances, and then the combs should be transferred as well as the bees, or an enormous destruction of brood will be the consequence. It would be useless for any but a very advanced bee-master to attempt the transfer into a bar-hive, but with the aid of frames the task is far less difficult, and the mode of accomplishing it has been more than once fully described in these columns—as for example, in our number for July 22nd, 1869. If, however, you are not able to refer to back numbers, and are desirous of attempting the operation, you can write again, and if desired we shall be happy to repeat the necessary instructions.

METEOROLOGICAL OBSERVATIONS,

Camden, Square, London.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude 111 feet.

Date. 1871. Feb.	9 A.M. Barometer at 32° and Sea Level.	9 A.M. Hygrometer. Dry.	9 A.M. Hygrometer. Wet.	9 A.M. Direction of Wind.	9 A.M. Temp. of Soil at 1 ft.	In the Day. Shade Temperature. Max.	In the Day. Shade Temperature. Min.	In the Day. Radiation Temperature. In Sun.	In the Day. Radiation Temperature. On Grass.	Rain.
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
We. 8	29.964	49.4	49.1	W.S.W.	38.5	51 8	41.1	61.0	40.8	—
Th. 9	29.969	43.2	40.2	N.W.	40.2	48.8	37.8	50.9	34.0	0.132
Fri. 10	29.456	40 3	39.4	S.E.	39.3	44.8	35.6	51.8	31.4	0.172
Sat. 11	30.123	26.1	25 1	N.E.	38.3	30.0	26.0	54.0	26.4	—
Sun. 12	29.866	36.8	36.5	S.E.	37.0	41.3	25.8	42.2	25.7	0.020
Mo. 13	29.905	43.1	43.0	N.	36.4	50.2	36.4	56.2	34.4	—
Tu. 14	30.167	41.5	39.2	S.W.	36.8	48.5	33.5	76.2	29.7	—
Means	29.921	40.0	39.9	..	38.1	45.0	33.7	68.9	31.8	0.324

REMARKS.

8th.—Dull and damp early, fine evening.

9th.—Very fine day, clear starlight evening.

10th.—Barometer falling rapidly (about 0.07 per hour), a wild, wet morning, barometer lowest at 1 P.M. (29.265 inches), being more than three-quarters of an inch lower than at 9 P.M., on the 9th. Afternoon fine with rapidly rising barometer, and a northerly gale in the evening.

11th.—Very cold day, the shade temperature not rising to freezing point.

12th.—Milder, damp, dull day.

13th.—Fine, bright day, sun quite warm at times, black-bulb thermometer reached 86.2. Fog in evening.

14th.—Bright, mild, genial day, hazy in evening.—G. J. Symons.

COVENT GARDEN MARKET.—February 15.

Very little variation has taken place, the open weather having afforded us a better supply. Our quotations remain much the same. Good dessert Pears are in somewhat better request, also good forced vegetables. Large quantities of ordinary Apples are in the market, and it is difficult to effect sales of them. Large arrivals of Potatoes are again to hand, and only very choice parcels obtain last week's rates.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples ½ sieve	1	0	to 2	0	Mulberries lb.	0	0	to 0	0
Apricots doz.	0	0	0	0	Nectarines doz.	0	0	0	0
Cherries lb.	0	0	0	0	Oranges ℔ 100	6	0	10	0
Chestnuts bushel	10	0	18	0	Peaches doz.	0	0	0	0
Currants ½ sieve	0	0	0	0	Pears, kitchen doz.	1	0	3	0
Black do.	0	0	0	0	dessert doz.	2	0	8	0
Figs doz.	0	0	0	0	Pine Apples lb.	5	0	8	0
Filberts lb.	0	0	2	0	Plums ½ sieve	0	0	0	0
Cobs lb.	2	0	2	6	Quinces doz.	0	0	0	0
Gooseberries quart	0	0	0	0	Raspberries lb.	0	0	0	0
Grapes, Hothouse lb.	5	0	10	0	Strawberries lb.	0	0	0	0
Lemons ℔ 100	6	0	10	0	Walnuts bushel	10	0	16	0
Melons each	1	0	4	0	do. ℔ 100	1	0	2	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes doz.	0	0	to 0	0	Leeks bunch	0	4	to 0	0
Asparagus ℔ 100	7	0	10	0	Lettuce doz.	1	0	2	0
Beans, Kidney ℔ 100	2	0	3	0	Mushrooms pottle	1	0	2	6
Broad bushel	0	0	0	0	Mustard & Cress punnet	0	2	0	0
Beet, Red doz.	2	0	8	0	Onions bushel	4	0	7	0
Broccoli bundle	0	9	1	6	pickling quart	0	4	0	0
Brussels Sprouts ½ sieve	3	0	4	0	Parsley sieve	3	0	6	0
Cabbage doz.	1	0	2	0	Parsnips doz.	0	9	1	0
Capsicums ℔ 100	0	0	0	0	Peas quart	0	0	0	0
Carrots bunch	0	4	0	8	Potatoes bushel	2	0	4	0
Cauliflower doz.	2	0	6	0	Kidney do.	3	0	4	0
Celery bundle	1	6	2	0	Radishes doz. bunches	0	6	1	0
Coleworts doz. bunches	3	0	6	0	Rhubarb bundle	0	9	1	6
Cucumbers each	1	6	3	0	Savoys doz.	1	6	2	0
pickling doz.	0	0	0	0	Sea-kale basket	2	0	3	0
Endive doz.	2	0	0	0	Shallots lb.	0	6	0	6
Fennel bunch	0	3	0	0	Spinach bushel	3	0	5	0
Garlic lb.	0	8	0	0	Tomatoes doz.	0	0	0	0
Herbs bunch	0	3	0	0	Turnips bunch	0	6	0	0
Horseradish bundle	3	0	6	0	Vegetable Marrows doz.	0	0	0	0

POULTRY MARKET.—February 15.

Finer weather, the meeting of Parliament, and the conclusion of the game season have given a little more life to the market. The supply is somewhat below the average, but it is equal to the demand.

	s.	d.	s.	d.		s.	d.	s.	d.
Large Fowls	3	6	to 4	0	Pigeons	1	0	to 1	3
Smaller ditto	2	6	3	0	Rabbits	1	5	1	6
Chickens	1	9	2	6	Wild ditto	0	9	0	10
Ducks	2	0	2	6	Hares	3	0	3	10
Geese	7	0	8	0	Guinea Fowl	2	0	2	6
Pheasants	1	9	2	3	Grouse	0	0	0	0

WEEKLY CALENDAR.

Day of Month	Day of Week	FEB. 23—MARCH 1, 1871.	Average Temperature near London. Day.	Night.	Mean.	Rain in 43 years. Days.	Sun Rises. m. h.	Sun Sets. m. h.	Moon Rises. m. h.	Moon Sets. m. h.	Moon's Age. Days.	Clock before Sun. m. s.	Day of Year.
23	Th	Meeting of Royal Society, 8.30 P.M.	47.4	31.5	39.4	14	1 af 7	27 af 5	56 af 8	57 af 9	4	13 37	54
24	F		47.1	32.8	39.9	20	59 6	29 5	13 9	5 11	5	13 28	55
25	S		47.7	32.7	40.2	22	56 6	30 5	31 9	morn.	6	13 19	56
26	Sun	1 Sunday in Lent.	47.2	33 6	40.4	23	54 6	32 5	54 9	12 0	7	13 9	57
27	M	Meeting of Royal Geographical Society,	47.7	33 5	40.6	20	52 6	34 5	20 10	19 1	)	12 58	58
28	Tu	[8.30 P.M.	49.1	32.8	40.9	15	51 6	36 5	52 10	23 2	9	12 47	59
1	W	Royal Horticultural Society, Fruit, Floral, [and General Meeting.	47.4	33.6	40.5	16	48 6	37 5	30 11	24 3	10	12 36	60

From observations taken near London during forty-three years, the average day temperature of the week is 47 7°, and its night temperature 32.9°. The greatest heat was 62°, on the 25th, 1868; and the lowest cold 18°, on the 24th, 1860. The greatest fall of rain was 0.92 inch.

THE CAMELLIA, AND ITS CULTURE—No. 1.

[A portion of the following paper was read at the Royal Horticultural Society's Meeting on the 15th inst.]

GIVE a dog an ill name, and hang him," is a proverb that is pretty generally known and understood in every phase of English life. Now I have to deal to-day, so to speak, with a dog that has unfortunately, and, in my judgment, undeservedly acquired an ill name, and one object I have in view in taking up his case is to endeavour to set him right with the public.

Those of us who have any knowledge of dog-nature must be aware that if we keep a dog unduly shut up, or feed him on unsuitable or insufficient diet, unless he be of a very accommodating disposition, he will most likely manifest some signs of uneasiness or displeasure. Now, animal nature and plant nature are much alike in this respect. In dealing with the one as with the other, diet and treatment are everything, and pet plants, like pet animals, are sometimes neglected, sometimes ill-nurtured by improper food, and sometimes fed or worried out of health.

To drop metaphor, the Camellia japonica is a native of China and Japan, and was introduced to this country by Lord Petre about 1739. It was named in honour of George Joseph Camellus, a Moravian Jesuit. Mr. Fortune, who has travelled both in China and Japan, has obligingly given me the following account of the plant or tree in its native countries.

"I have met with the Camellia japonica growing as a wild plant over a large tract of country in the central and southern provinces of China, but its principal habitat lies between the 20th and 30th degrees of north latitude.

"The early spring in the district alluded to is generally remarkably fine, and rather dry. From April to June the weather breaks, and becomes moist and showery. In the end of June and throughout July heavy rains and frequent thunderstorms prevail. In August, September, and October the weather is usually dry and fine. The south-west monsoon, which prevails during the summer months, now changes to north-east, and the weather becomes variable during the latter part of the autumn and winter. Those who know how to cultivate the Camellia in Europe will see at once how well such a climate is suited to its constitution. It has in its native home a winter cold enough and dry enough to check vegetation, and to secure a period of rest; an early and fine spring, during which time the flowers bud forth into bloom, a moist atmosphere in the growing season, and a dry and warm summer and autumn to ripen the young shoots.

"I generally found the Camellia growing in woods where it was partially shaded from the sun by other trees, and in these situations it often attained a height of from 30 to 40 feet. The wild plants have usually single or only semi-double flowers. The foliage of these trees is exceedingly handsome—a dark glossy green. The double-flowered kinds, which have been from time to time imported to Europe, are garden varieties, and are only met with in a cultivated state.

"There are several species of Camellia found in China, but with one exception—namely, C. reticulata, none are so handsome as C. japonica and its varieties, and of these we in Europe have a more extensive and finer assortment than the Chinese have themselves.

"In Japan the Camellia is also found in a wild state. I met with it frequently in shady woods like those in which I had seen it in China. In Japan Camellia Sasanqua is used for ornamental hedges round the gardens near Yeddo, the capital of the country. In November these hedges are very beautiful when the white and rose-coloured varieties of the species are in full bloom."

The Camellias originally introduced by Lord Petre in 1739 were killed by being kept in a hothouse—this was keeping the dog unduly shut up—and some years must have elapsed before the plant was re-introduced, for it is not found in the seventh edition of Miller's "Gardener's Dictionary," published in 1759. Abercrombie, however, includes it in his list of hothouse plants given in the "Garden Vade-Mecum," published in 1789. Several beautiful varieties were introduced from China towards the close of the last and at the beginning of the present century, among them the Double White, the Double Striped, Lady Hume's Blush, Fimbriata, and Imbricata: reticulata, Cup of Beauty, and Princess Frederick William were of later introduction. Others have been raised by English, continental, and American horticulturists. The nurseries of Messrs. Chandler, of Vauxhall, and Messrs. Loddiges, of Hackney (both now abolished), produced early in this century many beautiful new varieties, and the late Mr. Press, of Hornsey, and Mr. Fielder, of Enfield, added to the store.

Mr. Chandler tells me that about the year 1819, a season very favourable for seeding, he saved about half a peck of seeds from the variety known as Warratah, the flowers of which had been fertilised with the pollen of the Double Striped and other esteemed sorts. The seeds were sown as soon as ripe, and vegetated in a few weeks, producing several hundred plants. When two years old, and from 6 to 9 inches high, these seedlings were inarched on the Single Red, and in two or three years they flowered. From this crop were raised Chandlerii, Eximia, Elegans, Florida, Aitonii, Rosa-sinensis, Corallina, Althæflora, Woodsii, Insignis, Concinna, and others.

Mr. Press appears to have been most successful with the Anemone-flowered varieties—that is, those kinds which have a cluster of small petals in the centre, and a row of large petals at the base of the flower. Of these Eclipse, Picturata, and Candidissima may be given as examples. Mr. Fielder's seedlings are more of the florists' type, resembling the old Double White in shape. Two of his seedlings, Jubilee and Rubescens, raised some twenty-five years ago, still rank among the best. Miniata, Lowii, and Alexina were also raised by him. Mr. Fielder tells me that Miniata was raised from Sasanqua and Lepida, and that he still considers Lepida, an old semi-double red kind, with large, smooth, thick petals, one of the best to raise seedlings from

He further says that he has tried numerous experiments with the view of raising seedlings from reticulata and Donckelaeri, but has never succeeded in doing so.

Although other English and Scotch gardeners have been successful in introducing here and there a good variety, the number of English-raised sorts has not recently been great. Judging by the names of the novelties which are now reaching us, we may, I think, reasonably assume that Italy is doing the best work in this field at the present time.

In 1826 Chandler and Buckingham, of Vauxhall, published "Camellia Britannica," a quarto volume with eight plates, and in 1831 appeared "Illustrations and Descriptions of the Camelliæ," by Chandler and Booth, in which some of the finest varieties then known were figured and described. Shortly afterwards was published a work on the same subject by the Messrs. Baumann, of Bolwyller, and more recently a beautiful work by Mr. Ambroise Verschaffelt, of Ghent, appeared, the latter containing innumerable and beautifully executed plates.

The Camellia is by nature a first-class town plant. Some few years ago it was an object of special culture both at Loddiges', at Hackney, and Chandler's, at Vauxhall. It was a great treat to lovers of flowers to visit either of these establishments during the season of flowering. I have seen both collections when at their best. Chandler's young plants always appeared to me the most comely, but Loddiges' large plants were gorgeous beyond description. They were planted out in a house some 30 or 40 feet high, and many of them were pressing against the glass at the top of the house. As you walked beneath and gazed upon the broad, dark green massive leaves, plentifully sprinkled with various coloured flowers, blackbirds, thrushes, and smaller birds fluttered incessantly among the branches, where, with a keen sense to comfort, they had built their nests in this splendid grove of flowering trees. But all this, alas! has passed away, and I know of nothing now in existence that can in any way compare with it. We must turn our eyes in another direction—to the improvement and multiplication of varieties, if we would set up a claim to progress in this branch of horticulture. Some of those old varieties are, doubtless, surpassed by the recent introductions, if we judge them by the symmetry of the individual flowers, and where there were hundreds of Camellias in those days there are thousands now. With this brief historical sketch I shall proceed to the more practical part of my subject.

Everybody acknowledges the Camellia japonica, or Japan Rose, to be a beautiful plant, but many consider it a difficult one to grow and preserve in good condition. This impression derives support from the fact that we often meet with plants which are misshapen and have a meagre appearance, the flower buds sometimes dropping off prematurely. If, however, the plants and varieties be properly chosen, this need not be, except by default of the cultivator. The Camellia may be grown and kept in condition with as little trouble as the commonest of our hardy plants. True, it requires special treatment, and I shall proceed to lay before you the results of my experience in cultivation under the following heads:—

1. Of Soils.
2. Of Climate.
3. Of Propagation.
4. Of General Culture.

And 1st, of *Soils*. Camellias will grow very well in either peat or loam, but it should not be poor peat or loam—the dog will not thrive on insufficient diet. Chandlers grew their plants in two parts loam and one part peat. Loddiges grew them in peat alone, in loam alone, and in a mixture of both.

I have found Camellias grow more luxuriantly in loam than in peat, but they flower more freely in a mixture of both. Some people are accustomed to speak of loam and peat as if these words possessed a precise and definite signification, whereas, according to my experience, they possess a very vague and indefinite one. There is rich peat and hungry peat, sandy peat and fibrous peat, and, *horribile dictu!* sour peat, which is usually gathered in low wet places, and which every good gardener will studiously avoid. Loams vary in a similar manner. The physical or mechanical properties of the soil are of scarcely less importance here than its chemical properties. We want a soil that is open and porous, which it will certainly be if sand and fibre abound in it.

The soil I prefer for the Camellia is composed of three parts sandy loam, and one part fibrous peat and leaf mould in equal quantities. If sandy loam is not readily obtainable, light loam may be used, with the addition of drift sand. To this add a few small lumps of charcoal and a few pieces of crushed bones. Manure, however, I prefer giving principally in a liquid state during the season of flowering and growth only. These different materials should be broken up and mixed together some months before they are required for use, and be turned over occasionally that the component parts may become thoroughly incorporated, and every part be subjected to the mellowing influences of sun and air.

2ndly, of *Climate*. We have seen that the plants first introduced were killed by being kept in a hothouse; it is, therefore, amusing to find old Abercrombie including the Camellia among hothouse plants fifty years later. The fact is, the plant is nearly hardy in the climate of Britain, and the less fire heat employed, except during the growing season, the better. In the flowering season the flowers do not expand kindly, and often fall speedily if placed in heat. In Devonshire, in many sheltered parts of the country, and even in the neighbourhood of London, where the soil is tolerably dry, the Camellia has been planted out both in the open ground and against walls, where it has resisted the frost of several successive winters. It must be told, however, that some varieties are hardier in our climate than others. One of the most skilful of American horticulturists has assured me that some kinds which usually have a delicate and meagre appearance here are exceedingly healthful and vigorous in the climate of New York. We cannot count upon the Camellia as a *flowering* shrub, only as an *evergreen* shrub, out of doors in this country, because the flowers produced under out-of-door culture expand in spring, when they are often quickly spoiled by the variable weather. In order to rejoice in all its beauties we must then use glass structures. In winter and spring it will suffer nothing, when under glass, from 10° or 15° of frost. Both Chandler's and Loddiges' collections were frequently frozen, but never hurt.

When the flowering is over, and the new growth commences, say in March, a warmer climate than we usually experience out of doors is desirable. A temperature of 60° to 70° by day and 50° by night should be maintained throughout the growing season, which we will assume to be March, April, and May. The hygrometric state of the air is not less important than its temperature at this season. Mr. Chandler attributes the dropping of the buds to dryness of atmosphere and too much fire heat. What gardeners call a moist air should be secured by syringing the plants once or twice daily, copiously or lightly, during the season of growth, according to the amount of sunshine experienced. Soot water may be used with advantage in syringing. A close dank atmosphere must be avoided by the admission of more or less air from without, as the state of the weather may permit. By the use of heat and moisture at this season we seek to realise and combine a vigorous growth with a full crop of flowers.

The health of the Camellia is much influenced by sunshine and shade. The plant loves the shade. Some of the most remarkable specimens for foliage I ever met with were planted by myself against a west wall out of doors in my own neighbourhood, many years ago, in a spot where the sun scarcely ever reached them. Shade is necessary during the season of growth, for without it few or many of the leaves, according to the style of the house or the quality of the glass, will become burnt or blistered. The flowers should also be shaded when in bloom. When growth ceases, and the young shoots become partly hardened and the next year's bloom is set, the best climate is that out of doors. Remove the plants from the house, say in June, to a north border where they get the morning sun only, leaving them there till the middle of September, when they should be carried back to the house before the soil becomes saturated with the autumnal rains. These latter remarks, of course, apply only to plants in pots. But where the plants are in the ground under glass, nearly the same effects of climate may be secured by shading and giving air. In a few words, I repeat the climate of England is very near to the best that the Camellia can have. The plant should be treated as a hardy evergreen with two slight exceptions—we should hold in our hands, by means of glass structures, the power of moderating a severe winter should it occur, and the power of giving a slightly higher temperature than that of our climate during the growing season in spring.

I have often been asked, "How is it that Camellias received from abroad, so vigorous and healthful in appearance when they arrive, almost invariably deteriorate in this country?" Some attribute it to climate, others to soil. In my judgment it is due to the forcing system they have previously been subjected to. These plants are grown far too long a period in a hot, moist, shady climate, with the view of obtaining the largest possible plants in the shortest possible time. The hue which captivates is not that of health, but a hectic glow; the plants

are really unsound, and it is no easy matter to restore them to a sound state.

3rdly, of *Propagating*. The Camellia is propagated by cuttings, by grafting, by budding, and by inarching. Propagation by cuttings is principally applied to the species (the Single Red), on which the choicer varieties are grafted, budded, or inarched. Many of the double kinds root and grow well enough from cuttings, and are grown largely in this manner in America; but in this country they appear to grow faster and thrive better generally when grafted on the species. The young shoots of the species, when not over-ripe, say in August, are cut into pieces about 2 inches long, and placed in pots of sand, and set in a close house or frame under glass, where a gentle ground heat is maintained until they are rooted in the April following. They may then be placed each in a separate pot and kept in the same house or frame until they become established in the pots (September), when they may be removed to pass the winter in a cold pit. If heat be given during the growing season of the second spring, these young plants, or stocks, as they are technically called, will be ready for grafting in the following autumn or spring.

Grafting is the method usually applied for increasing the finer kinds of Camellias. In autumn or spring pieces about 1½ inch long, with two leaves on each, may be cut off the plant which it is the intention to reproduce; the lower end of these pieces should be pared flat on one side, and the stems of the stocks being pared in a similar manner, the two flat sides are then brought in contact and bound together with cotton or bast. The plants thus grafted should be kept in a close pit or house for a few weeks, after which period they may be gradually inured to the open air. In spring the dormant buds of the scion or stranger plant may be allowed or encouraged to vegetate, but those of the stock should be kept in check. When the adhesion is solidified the ligature may be withdrawn, the portion of the stock that has been left till then may be cut away, and the stock, or species, is to all intents converted into the variety we have laboured to reproduce. The cultivation of these young plants is henceforth the same as that of older plants.

Propagation by budding may be followed successfully, but as I do not consider that mode so eligible as grafting for the Camellia, I need not occupy your time by entering upon it.

Propagation by inarching was much resorted to in the olden times, and is a sure plan, and a capital one too, if a few large plants instead of a greater number of small ones are sought for. A good-sized branch of any favourite variety may be united to the stem of any less-valuable kind in the same manner as in grafting, except that in inarching the branch is not wholly detached until the union is perfected. The two plants are set side by side, a branch of the one is pared, laid, and bound on a pared branch of the other, and when the union is complete (in a few months), the two are separated, and the inarched plant is treated subsequently as if it had been grafted.

Propagation by seed is principally used to obtain new varieties. Stocks for grafting on are also raised in this manner, but I prefer those raised from cuttings of the species which is of a known hardy constitution, whereas seedlings are apt to vary much in that respect. The seed should be sown as soon as ripe, for if stowed away and allowed to dry the shell or exterior coating becomes so hard that the process of germination is retarded, and the chance of a crop lessened. Sow in pans in peat or light sandy loam, covering with the same soil to the depth of 1½ inch, where there is artificial ground heat. Keep the soil regularly moist. When the germ pushes through the soil, constant shade is indispensable. The seed is often long in vegetating—it has been known to lie dormant for two years—and the seedlings will not usually bloom until four or five years old. I can see no reason why Camellias should not be raised from seed as extensively in England as elsewhere; it is merely a question of cost, and there is certainly no finer field open to the experimentalist. — William Paul, *Paul's Nurseries, Waltham Cross.*

SUBSTITUTES FOR USUAL VEGETABLES.

Mr. Adderley asks (page 66) for information respecting the best substitutes for Greens, &c., killed by the late severe winter.

Parsnip tops I have found very useful when I have been short of Greens. Although they have rather a peculiar flavour, they are not to be despised; the crowns cut off the Parsnip will freely take root, and produce a good crop if planted firmly. Common Turnips and Swedes, if planted on a little bottom heat, would produce a few good dishes in a very short time. Turnips sown now on a warm border would be found very useful, as they almost always begin to run to seed, instead of making bulbs, if sown early. Salsafy and Scorzonera tops make good substitutes for Spinach, and may be blanched like Sea-kale if preferred. Celery makes a very useful dish if boiled and served up like Sea-kale, although we do not often see it used in that way. Early long Radishes will be found very acceptable if boiled and served the same as Asparagus; and if Cucumbers be cooked like Vegetable Marrows it will hardly be possible to detect the difference in their taste.—Lancashire Subscriber.

THE DOYENNÉ D'ALENÇON, alias DOYENNÉ D'HIVER NOUVEAU.

Your correspondent, "B.," has done good service by bringing this old but rather neglected Pear into notice. I received it under the latter name about the year 1840; I find it in my catalogue for 1843 under that name. It was, after a few years, on its origin being known, changed to Doyenné d'Alençon, it being a seedling found in the environs of Alençon. I remember having an argument with the late Mr. Thompson, of Chiswick, he thinking it to be identical with our Easter Beurré—Doyenné d'Hiver. I think he had received the latter sort under the name of Doyenné d'Alençon. I soon convinced him of his error by sending him some leaves. These are most unlike the Easter Beurré, as they are glaucous and downy. The climate and soil of Frogmore—an English paradise of fruits—must suit it well if it bears freely as a standard on the Pear stock. Here it succeeds on the Quince, and its fruit having a family resemblance to the Easter Beurré, is often good till May; in some seasons it fails to ripen, like other very late Pears. It requires, as I have always said, a warm climate. It has been distributed from here to a considerable extent for many years past.

There are two valuable late Pears allied to the Doyenné race, and likely to be hardy and valuable—viz., Duchesse de Bordeaux, *alias* Beurré Perrault, and Marie Benoist. These two kinds ripen in February and March, they are quite hardy, and likely to prove valuable. The finest and hardiest of our late Pears is Bergamotte Esperen. I have eaten one to-day of rather a large size, as it was as large as a Brown Beurré—its flavour and texture as nearly as possible perfection. This sort but seldom fails to ripen well here from pyramids on the Quince stock. Louise Bonne de Printemps, a very handsome Pear, seems inclined to ripen, after our last warm summer; and Olivier de Serres, a spring Nelis, ripens well in March and April, and has not yet failed to do so.

I ought not to forget to mention a fine late Pear, Passe Crasanne, a specimen of which I ate this day (February 12th) a few minutes since; its appearance, yellow and red, very handsome; size, medium or large; and its flesh quite melting, quite juicy, and quite rich, with its after peculiar and grateful aroma. Only one fruit out the locker was ripe and ready. This is a Pear raised at Rouen several years ago. It does well on the Quince, and forms a close pyramid, under which form it has been grown here for a few years. A seedling from it, Prince Napoleon, they say is even better than Passe Crasanne. We shall, I hope, see it this season. I believe it to be good, because the raiser is an honest Norman.—Thos. Rivers.

VARIEGATED PLANTAGO LANCEOLATA.

Plantago lanceolata bids fair to rival, if not to surpass, in beauty the smaller varieties of Funkias, being in its best condition in the spring—an advantage the Funkias do not possess; but it is not of much value during the summer months, owing to the plants during hot weather losing their variegation, which they again regain on the approach of winter.

The variegation mostly consists of broad marginal bands—white, cream-coloured, or yellow, and sometimes there is a central variegation. These forms can seldom be produced from seeds, and the plants must be multiplied by division of the crown, or by cuttings with a small portion of the root stem attached, placed in spring in a slight bottom heat. They quickly make good plants, and may then be planed out. Their low growth and rosette-like appearance render them very attractive.

There are also several varieties of Plantago lanceolata with yellow and yellowish green variegation. These may be pro-

duced from seeds, but are not so attractive as the margined varieties.

I have also had some nice variegated varieties of Plantago major and Coronopus, but find them difficult to increase. However, I can see sufficient indications of different forms of variegation in the Plantago family to warrant my predicting they will find a place in the select herbaceous border, and become welcome additions to the best collections of hardy variegated plants.—W. E., *Gardener, Cromwell House.*

THE EFFECT OF GAS LIGHT ON PLANTS.

If there is any branch of gardening for which I have a special liking, it is that of growing plants for house decoration; and if there is any part of my duty which I sometimes feel reluctant to perform, it is after growing my plants to have to subject them to the destructive influences of gas. This, perhaps, is only a natural feeling, and it is surprising how easily and almost imperceptibly such a feeling wears off when a person considers that it is just his duty to do that which is required of him, and if employers are satisfied, why gardeners should be so likewise. But it has occurred to me that as many, if not most, of the private residences of the wealthy, both in town and country, are now lighted with gas, and plants for house decoration were, I think, never in greater demand than at present, I cannot do better than devote a short paper to the subject. Though my experience is rather limited, yet, as the matter is of great importance to gardeners generally, I hope that others will respond to my invitation and state their experience also, so that gardeners and purchasers may know better what plants to grow or buy for the particular purpose in view.

Although I do not know of any plant that will even live for any length of time, not to say grow, in an atmosphere strongly impregnated with gas, yet a great variety of plants will withstand gas for a surprising length of time, though not without injury; while there are many that are injured beyond recovery in less than one night or day. The flowers of plants are generally the first to suffer; the thick petals of the Orange flower and Camellia, and the more delicate petals of the Persian Lilac, Begonia, Pelargonium, Myrtle, Daphne, Rose, Deutzia, Fuchsia, Datura, Salvia, Acacia, Tulip, and Crocus, fall as suddenly as if by magic, and with less than two hours' exposure to gas light; while the flowers of the Hyacinth, Cineraria, Spiræa, Primula, Gesnera, Epacris, Heath, and Poinsettia will bear up for a considerable time, the last-named especially; its showy bracts shrivel up, but do not drop. Of the foliage of the above-named plants, that of the Poinsettia, Orange, Rose, Lilac, and Cineraria are the first to show signs of distress, while the leaves of the others will mostly turn yellow or become sickly-looking before dropping off. Next come plants with ornamental foliage. Of these, the leaves of large-leaved Solanums, Colenses, Acacias, Farfugiums, and Wigandias suddenly curl up, and as quickly fall to the ground; and those that stand the longest without showing distress are Richardia, Ficus elastica, the strong-growing Caladiums, such as pictum, esculentum, and atropurpureum; Maranta zebrina and Porteana, Gesneras, Crotons, and Ferns. Isolepis gracilis must also be included. I observe that fine-foliaged plants are more ornamental by gas light than flowering plants, excepting, perhaps, the gaudy floral bracts of the Poinsettia. This plant is quite an exception; it will enliven the dulness of a bank of evergreens, it bears the heat and gas well, and is a favourite with everybody.

Unless large quantities of plants should be required for special occasions, I presume the most expensive plants in the list I have given would not be used, nor should I advise it, for it is not difficult to compile a list of plants easily grown and comparatively inexpensive, and that will resist the influence of gas tolerably well, so that less loss would be incurred if it should prove fatal to them. These plants consist of greenhouse Ferns, such as different kinds of Adiantum and Pteris, Richardia æthiopica, Primulas, Cinerarias, Lachenalias, Myrtles, Gesneras, Ficus elastica, Isolepis gracilis, Poinsettias, Hyacinths, Epacrises, Heaths, and some hardy evergreen shrubs, such as Thuja aurea, Cupressus torulosa, variegated Box, Euonymus, and the like. These are all dwarf-growing and manageable plants, but, doubtless, many more may be added.

I avoid as much as possible sending in early-forced shrubs and plants, such as Lilacs, Deutzias, and Ghent Azaleas. It often happens that many of the rooms to be decorated are heated to a high temperature, and, being a dry heat, it proves hurtful to such plants as Heaths and Epacrises, which have very fine hair-like roots; the life is dried out of them. A good plan, when it can be adopted, is to tie some damp moss round the pots; it preserves the roots remarkably well.

So far I have only noticed the behaviour of plants in heated and confined rooms, with little or no ventilation, and with the gas jets arranged close above, or may be below, many of the plants. In such positions, with the fumes of gas rising upwards, the plants are at the greatest possible risk of being injured; but whether in large or small rooms, I think the injurious effects of gas upon plants will be found to be small in proportion to the amount of ventilation given, and the facilities afforded for the escape of the impure air before coming in contact with the plants. Of this, however, I am not certain, and I should like to hear from others having more experience than myself, for gas-lighted structures are becoming so common, and the information as to the best plants to put in such places is so very scanty, that I hope to refer to the subject again at some future time when I shall have gleaned more experience. —Thomas Record, *Hatfield.*

HOP CULTIVATION FOR ORNAMENT AND USE.

No. 2.

Propagation and Culture.—Having noticed the soils on which the Hop is often grown, we now come to its propagation and planting, the former being a simple affair, the latter often preceded by some expensive operations on the land. I shall, therefore, commence with planting, and say that when it is determined to make a new plantation it is usual to select one of the best plots of ground the farm possesses, and if it should have already been in tillage (which land, I may remark, is not considered so desirable as that which has been under wood, orchard, or grass), it is ploughed deeply in the ordinary way, and also subsoil-ploughed; or, what is better, and very frequently done, the surface is ploughed in the usual way, and a gang of men—ten, or perhaps a dozen—follow and dig up the bottom of the furrow before the plough returns. By a suitable arrangement of man and horse power this can very well be done without loss of time to either, and is much better than subsoil-ploughing. Trenching is not unfrequently performed, and in the case of woods, coppices, or orchards the removal of the roots generally effects the same purpose as trenching, and Hops like such land better than that which has been long under tillage; the consequence is that in many places coppice wood has entirely disappeared, only steep banks and a few patches being left for shelter or game.

Supposing a plot of ground to be ready for planting, some one well used to marking out the ground is generally employed to set it out, as great exactness is often exercised in doing this. The most common way is to have what is called a "square plant"—that is, the rows are at right angles to each other; some, however, prefer the triangle, or what gardeners would call quincunx order, both often containing about the same number of plants per acre, generally 1210, they being placed 6 feet apart each way in square planting, and something more in the diagonal measurement of the "triangle plant." Some planters give more space, but the majority only as much as stated; and a great portion of the work in the Hop garden being done by the piece, it is customary to regard 1200 plants, or hills as they are termed, an acre. In setting out a new plantation care is taken to have the line as straight as possible. An ordinary garden line with a piece of red worsted stitched into it at every 6 feet is sometimes used, but as the line is apt to stretch in dry weather and contract when wet, some check is used along with it. A chain made on purpose is more accurate. In the setting out, a stick is pushed in where the plant is to be, and the planting is done all together; I will, therefore, take the preparation of the plants next.

Although the Hop produces seed in as great abundance as most plants, it is never propagated in that way, except for experiment, the seedlings differing so widely from the parents, and a considerable portion of them being very often what are called male Hops—*i.e.*, not possessing the bitter quality which gives value to the Hop. It is, however, a disputed point amongst botanists of the Linnean school whether the plant belongs to the twenty-second or twenty-third class of that system, as the same plants which produce male Hops one year may produce a few female ones the next, and *vice versâ*; accordingly the great body of growers carefully eradicate all male plants as they appear. Others again affirm that a few male plants in a plantation are an advantage rather than otherwise, and plant

one to a hundred or thereabouts, insisting that the ninety-nine bearing plants with the aid of the one male plant produce more than a hundred all of a kind. Whether it be so or not, it is certain that the presence of the male plant is not necessary to insure good seed, as that is produced whether it be near or not. But as plants for general use are not obtained from seed it is needless saying more on this head, I will therefore at once pass to the mode in which Hops are generally propagated, which is simple enough.

The Hop being an herbaceous perennial its stems die down to the ground every winter, but as the gathering of the crop renders it necessary to cut the bine in the centre long before the sap has ceased to rise in the stem, much injury is unavoidably done to the plant, but to render this as small as possible the bines or stems are cut as high as they conveniently can be consistently with their standing upright without support, for the poles to which they cling are removed at this time, and to cut the bine at a greater height than 2 feet from the ground would cause the tops to bend over, hang down, and bleed. The bleeding is said to weaken them, and great care is therefore necessary to prevent it. In February or early in March what is called the dressing has to be attended to, the whole of the ground having been previously dug, and the necessary dung, &c., added at the same time. The dressing here alluded to is the winter pruning, which is accomplished by scratching away the earth from the crown of the plant with a short-handled tool made for the purpose, and the shoots which have been standing all the winter are cut off close to their junction with the crown of the plant. As they are often buried in a slanting position in the ground, there will be 6 inches or more that has been in the soil, and this part is frequently swelled to the thickness of a broom-handle, with some roots emitted, as well as embryo shoots. These cuttings, called sets, make the plants used for future plantations, and they may either be planted in their places at once, or, as more commonly practised, bedded-out one year in a nursery ground, whence they are transplanted to the ground allotted for them. Two or three are planted on a hill, unless plants are very scarce, when only one is used, as is the case with a new or scarce variety. The growth of the bedded sets being, of course, better that that of the mere cut ones, larger poles are required, a single pole of 6 or 7 feet high being sufficient for sets not previously prepared, while the latter require more than one year's growth ere they are treated to what is called a full pole.

Poling.—After the old Hop ground has been dressed or cut, and when the young growth is a few inches high, it is time to put in the poles; in fact, this might be done earlier, only the shorter time poles are in the ground the better, to prevent their decay. Poling is often performed in April, and as Hop poles form a very important feature, as well as a very heavy item in the expenditure, I may state that for the taller kinds of Hops it is a common practice to put alternately two and three poles to each hill, or about 3000 poles to the acre of 1200 hills. In placing the poles, their sharpened ends are struck into the ground with a smart jerk, a hole having previously been made by an iron implement called a Hop-pitcher. The bottoms of the holes are about 16 inches apart, but the tops are somewhat more, care being taken at the same time to keep them as straight as possible in the direction called the main line; but whatever care be taken, it must be admitted that a piece of ground covered with naked poles has not by any means a picturesque appearance.

Trimming and Tying.—We now come to the management of the growing plant, the first operation after the poles are put in being tying the young shoots to the pole to start them. This is invariably done by women, who, by practice, become very expert at it. The young shoots, growing rapidly, must not be allowed to become too long ere they are tied to the pole, otherwise they get entangled with each other in a way difficult to remedy; at the same time they must be long enough to reach to the pole, or nothing can be done with them. Some growers like the most robust shoots tied in, but the majority reject them, and prefer the middle-sized, short-jointed, rather wiry shoots as being the best. All agree that about three shoots are plenty for a pole, and sometimes only two are preferred. The shoots are tied to the bottom of the pole by a sort of sliding tie, which gives way when the bine increases in size, and they quickly take to the pole, but they have to be looked over again in about a week, and if not climbing up properly another tie has to be given. They are then often about a yard high, and at this time, or when they may be somewhat higher, all the surplus shoots are pulled off the crown of the plant, and two or three spadefuls of earth are put upon it. After this it is seldom any more shoots appear there during the season, the whole energies of the plant being directed to the growth of the bine running up the poles, which it does in the spiral direction common to all climbers, excepting the Kidney Bean, which twines the reverse way. The growth of the Hop, when the plant is 6 or 8 feet high, is often very rapid if the weather is fine at the end of May, when the growth frequently exceeds 6 inches in twenty-four hours, mild moist days and warm nights being the times when this plant is supposed to make most progress, which, however, is often arrested by enemies difficult to deal with, and sometimes the weather is not propitious. At this time the cares and anxieties of the Hop-grower begin, and they do not cease until the crop is gathered, and I may say sold and paid for, as few plants are so liable to mishaps as the Hop. The means taken to combat its insect enemies being such as a gardener may study with advantage and take hints from, I will make no apology for entering at length into this department, being convinced that the bulk of the gardening community have a very imperfect knowledge of what the Hop-grower is doing in this direction.—John Robson.

CALCEOLARIA FAILURES.

I have found, in almost every instance, the cause of Calceolarias failing, of which Mr. Robson complains, is their being planted in poor, sandy soil, incapable of retaining moisture for any length of time; consequently at the first period of dry weather the roots are burnt, as will be found upon taking up the plants and examining them.

In taking cuttings in September I always give the preference to short stocky shoots cut off with the heel. I insert them in large 60-pots, six in a pot, using equal parts of leaf mould, drift sand, and chopped moss, with plenty of drainage. I then place the pots upon coal ashes in a cold frame, which I always set facing the west. I plunge the pots in water before putting them in the frame, and but little water is needed till the cuttings are rooted. After they have struck admit air by raising a little the bottom and top of the light. I never take off the lights entirely till the beginning of March, for I consider it gives the plants a check, which I always avoid if possible.

At the beginning of February I pinch out the top, and at the end of the month I plant out in a frame on a warm border, placing the plants 4 inches apart every way, having previously prepared the ground in the following manner:—I take out 3 inches of soil, then fill in with 3 inches of rotten dung beaten firm, and cover the dung with sufficient soil, consisting of leaf mould, turfy loam, and drift sand in equal parts. After planting, keep the plants close till they are again established, then give them as much air as possible, taking off the lights entirely as the season advances.

In taking up the plants, cut round them with the trowel, and lift them with the ball entire. In planting out, choose a mild day early in April, having previously exposed the plants night and day for at least one week.

In preparing the beds I take out the soil to the depth of at least 1 foot, and fill in with 6 inches of good rotten dung pressed firm, and 4 inches of rough turfy loam, such as we use for Cucumbers, keeping the beds at least 2 inches below the walk or lawn. If the beds are to be occupied with other things, remove 1 foot of the old soil and fill in with good turfy loam, which agrees with all bedding plants, with the exception of Coleuses, which need an addition of sand. The most important point of all is to give water before they become too dry; when once they flag no amount of care will bring them round. I use manure water, tolerably strong, alternately with pure water, watering in the evening during dry weather twice a-week, and giving at least one quart of water to each plant.

I place the frames used in protecting the cuttings in a turf pit, and fill in between with litter. This, with a few mats thrown over during severe weather, will keep all safe.—W. Clark, *Cheshunt, Herts.*

AMERICAN POTATOES.

In answer to Mr. Rivers's observations on the American Early Rose Potato, I am very sorry indeed to find that he is so prejudiced against the "Yankees" and their Potatoes. I wrote to your Journal a short time since, mentioning the good qualities of, and highly praising the Early Rose for its heavy cropping, good size and appearance, and first-rate cooking pro-

perties, and I still affirm, having thoroughly proved it, that it is one of the best Potatoes in cultivation.

I am afraid Mr. Rivers puts too much confidence in his cook, for he says, "they were found to be harsh and dry, with a hard centre." This proves to me that they were improperly cooked. I should advise Mr. Rivers, before pronouncing such a strong condemnation upon them, to cook them himself, and if one way fails, to try another—not that this Potato requires any different method of cooking from any other. I do not wish Mr. Rivers to become a cook; but where the character of such a noble variety is at stake, and when amateurs and others might be misled, and be prevented from knowing the true character of this excellent Potato (for the pen of Mr. Rivers is greatly depended on by this class), it would be more satisfactory if he tried them himself. This is not the first, second, or third time I have known Potatoes condemned through bad cooking, and I fancy myself to be an adept in cooking Potatoes, for I have several times turned them out fit for anyone's table when good and professional cooks have cast them aside as a bad sort.—J. C. Lewis, *Sudbury, Derby.*

HOW AN AMATEUR GROWS GRAPES SUCCESSFULLY.

Having satisfied myself that it is a very easy and pleasant occupation to successfully grow Grapes under glass with scarcely any artificial heat, and at a very moderate cost, without neglecting my usual daily employment (being absent from home ten hours per day), I feel desirous of stating what I have done during the last three years.

My residence is about a mile from one of the central towns, and it being a detached cottage facing the west, I was recommended to build a lean-to glass house on the south side as a vinery and general greenhouse. A builder, who knew his business, contracted for £30 to erect one the full length of my dwelling, 30 feet long, 9 wide, 8 high in front, and 13 at back, with a door leading directly into my dining-room and one into the garden. I then put a double row of 3-inch piping for hot water, about 90 feet in all, along the front and both ends, partly below the floor for the convenience of the door, the remainder about 6 inches above the floor, and covered with latticework; on the outside, at one end, I had a pit dug 5 feet deep and 3 wide to hold a small copper boiler for heating the water by gas. This apparatus complete, including piping and fixing, cost £15, and it answers admirably.

Being quite ignorant of Vine culture I wrote to your office for the "Vine Manual," which I read carefully, and, in addition, asked the advice of an old gardener, who recommended me to make an outside border, 3 feet wide and 2½ deep, along the front and ends of my new house. This border was composed of two kinds of turf, quite fresh, from heavy and light soil, cut up into pieces from 3 to 6 inches square—three barrowloads; of light loam two barrowloads, and about one barrow filled with lime rubbish, oyster shells, small bones, and horse manure. Being a light porous subsoil, no drainage was required. The border was elevated 6 inches above the surrounding ground, gradually sloping from the house, and finished in February, 1868, the materials being mixed together before they were put into the hole.

In about six weeks, having given the border time to settle, I sent the gardener to a Vine-grower for some year-old plants; he bought two Black Hamburghs, two Alicantes, and one Old White Tokay for, I think, 30*s*. They were set in April, 1868, not more than 1 inch deep, and the canes brought into the house through holes in the wall a little below the level of the border. Over the roots of each was put half a barrowful of light, fresh stable manure, to produce warmth and to encourage growth. The Vines soon began to grow, and were allowed for the first year to run over the house without any pruning, and only one bunch of Grapes was left to each. They were cut down in January, 1869, leaving two or three good canes to each; next season they were permitted to grow freely with very little pruning, and to bear five bunches of fruit each. 1870 brought me good, strong, healthy Vines, with from forty to fifty bunches of Grapes upon each. I allowed one hundred and fifty to ripen, and began to cut the fruit early in October, and continued cutting till January 15th, when I had 30 lbs. of good, sound Grapes, having had nearly 130 lbs. of fresh ripe fruit during the season—four months; some of them are not eaten yet, February 10th.

The cost in labour has not been 20*s*. since they were first planted. I only employ a man to cut the Vines down in January, and to paint them over with a mixture of soft soap and sulphur. I let the canes lie down until they have started in spring, then tie them up to the wire fixed crossways in the rafters, and continue this about once a-fortnight during the season.

The most troublesome job was thinning the fruit. I cut away several pounds' weight of Grapes, and yet I am told I should have had much finer fruit had I thinned them more. All branches bearing fruit I kept well pruned back to the second joint, excepting the thickest leading canes, which were allowed to make strong new wood for another season.

I find the most particular times are while the Vines are in flower, and in September when the fruit and wood require to be well ripened. The latter period was the only one at which I required to use artificial heat, but it is most important that the wood should be of a nut-brown colour, and thoroughly ripened.

In spring and autumn I have the house shut up early in the afternoon with a little air; in summer the top ventilators remain open day and night. My maxim is, Always give air, much or little, according to season, when the sun shines, and not any artificial heat, excepting on cold days in September, and then give all you can with plenty of air.

Were it not for my general collection of plants I should not require the gas on during more than twenty days in the year; as it is, the number of days on which I use it does not exceed forty in ordinary seasons. My house being well sheltered from the north winds, 5° or 6° of frost are of no consequence, providing it is well shut up. My better half soon learned these few rules of ventilation, and thus our united efforts have been crowned with success.—F. H. W.

ICE ON GLASS ROOFS—GLAZING—HEATING.

We have been struck with the very timely and useful remarks of Mr. Pearson at page 63. The house referred to at page 50 as having a short terminal square of zinc resting on the wood in front, instead of the glass coming down all the way, is the steepest-roofed house we have, the roof coming down to within a foot of the ground, and the front sashes as well as those at the back are moveable. The roof is at an angle of 45°; the steepness, therefore, was all in its favour, yet from the snow melting and sliding down outside, and condensed moisture trickling down inside, there was a few days ago a ridge of ice along the front of the house fully 4 inches deep, resting on the wood of the sash, the zinc, and a little on the glass. We allowed it to thaw before moving it, being afraid to break it off lest we might injure the glass. This house is 50 feet in length, and as yet only one square has been broken by the frost, and that close to the zinc. The squares are rather small—about 8 inches; and as so far confirmatory of Mr. Pearson's remarks, they are cut on the curve instead of the square, and with rather better than one-eighth of an inch of lap. The rounded lap looks the neatest, but we cannot say that in past times we have found it stand frost better than those cut straight across. The statement of Mr. Pearson is therefore all the more important, and we trust that others will note and report their experience on this matter. Then, again, were we putting up new orchard houses we would follow Mr. Pearson in using glass 14, 15, or 16 inches wide instead of 20 inches or wider. Such a size is not only more secure but more easily repaired when there is a breakage. As to weight, most of us would prefer 21-oz. to 15-oz. glass if we could get it. We would have no objection to even a much heavier good glass, believing that it would not only be more secure in general, but act in some degree as a regulator of temperature. There is just one fact that came under our notice that we would like to mention, and we would be glad to know if any reader has met with a corroborative case. A severe summer hailstorm that cracked and broke a good deal of 21-oz. glass, scarcely cracked a square of 16-oz. glass. We expected to see roofs of squares 20 inches wide riddled, and at some risk to face and hands turned out to see the smash which we would be powerless to prevent. It was a pretty sight, nevertheless. The 15-oz. glass yielded and gave to the hailstones, and was uninjured. The heavier glass did not yield, and was cracked and broken. This is the solitary case that we know, in which the thinner lighter glass proved superior to the heavy glass.

Then the testimony of Mr. Pearson is most important as to the bad results of dispensing with laps, and placing the nicely cut squares edge to edge. A great many roofs have been covered in this way, a great number, we believe, on the patented

principle of Mr. Beard. Would some who have tried this plan give us details as to how it passed through the late severe weather? United testimony on this matter would be most valuable, and especially in ornamental houses, as in them the laps often become eyesores.

We trust that even the amateur who purposes putting up a house or two for his pleasure will ponder over what Mr. Pearson says of cheap imperfectly annealed glass. It would be well if there were some simple test beyond appearance for detecting glass not properly made. At present we must depend a great deal on price and the character of the glass merchant. We have known cases in which very bad scored and spotted glass was obtained at the price of good glass. The rage for cheapness, however, is so great that it is no wonder that clever people are frequently taken in, and find that cheapness is just another word for dearness and discomfort. A few years ago a gentleman who was resolved to have a cool house as cheap as possible, showed us a fair specimen of some glass he could have for about 1*d.* per foot. We stated we should be sorry to use it at any price. We grounded our opinion on the colour, the warpings, scratchings, and blotchings. However, like many people who ask advice and have already resolved to have their own way, the glass was purchased, and hardly anything could be kept under it without having the leaves blotched and burned, no matter the amount of air given. This we expected, but we did not expect that as soon as the first frosts of the autumn came the squares would begin to crack and fly in all directions. After the second summer all had to be replaced. How are we to know when the annealing is all right?

As so much has been said on heating of late, we may mention that we went one afternoon to see the new stokehole and boilers placed in a little wood at Luton Park. Two boilers are placed side by side, to be worked singly or unitedly, one being deemed sufficient in ordinary weather to heat the whole establishment, with its many ranges of glass. We have mislaid and forgotten some of the details, but most likely we shall revert to them ere long; meanwhile we may remark, that no better example could be given of the economy of heating large establishments by hot water, as there is only one low chimney instead of many, and this being 60 or more yards from any of the glass, there will be no dirtying of the houses by blacks, &c. The boilers, placed side by side, and working unitedly or separately, secure safety, as it is scarcely likely that both should go wrong at once.

The main flow and return from the boilers go through an arched tunnel, deep enough for a man to pass along, and from these other main flows and returns are taken off as wanted. This conduit or covered passage being shut at each end, the pipes are found to contain a great reservoir of heat; and important, as bearing on some statements lately, the main flow in the conduit does not only rise a little all the way, but the other secondary flows to all the houses also rise from them; and from these, again, the heating pipes of each separate house rise considerably, so that the lowest pipes even for bottom heat are considerably higher than the main flow and return, and still more elevated above the boiler. As respects heating, nothing could answer better. But let those thinking of such a plan bear in mind that here there is no lowering of pipes, all are above the boilers. Lastly, for the present, after trying many boilers and systems, these new boilers at Luton Park are just the old simple saddle-back.—R. F.

AN IVIED WALL.

There is nothing to my mind which gives a greater degree of comfort and snugness, combined with a cheerful home feeling, than *well-kept* Ivy walls. I emphasise well-kept, because their beauty mainly depends upon a little care and attention, and a very little will suffice to keep them in beautiful order.

The Irish Ivy, so called, is best suited for the purpose. It should be planted in good soil and occasionally watered, and if with a little liquid manure it will grow the more rapidly. Care should be taken to cover the whole wall, but the main secret for keeping it in beautiful trim is every year to cut it closely at the beginning of March. It will, of course, remain bare and unsightly for a week or two, but the new leaves soon compensate for the temporary dullness, and give a lovely green surface that will delight and soothe the eye all the summer and winter.

At a late residence a wall 40 or 50 feet long and about 10 feet high ran along the flower garden, and I covered it in this way, adding, at the same time as the Ivy was planted, some of the strongest-growing Bourbon Roses. By adopting the plan above recommended the effect was admirable, and elicited the praises of all who saw it. If a good syringing can be given to the Ivy from a garden engine in the course of the summer, it will add much to the effect.—Hortator.

VERBENA PLANTS SHRIVELLING.

Like "R. F." we lost most of the Verbenas here in the way he describes. I could form no idea of the cause; they were struck in the usual way—that is, about eighteen cuttings were inserted in a 6-inch pot in September, and plunged in bottom heat until well rooted. Then they were gradually hardened off before storing them in their winter quarters, and all seemed to be thriving well until they were attacked just before Christmas with dark brown spots, first at the tips of the shoots. These spots seemed to gradually wither the plants up. I tried flowers of sulphur to no purpose. The disease seemed to me to attack the Verbenas in the same manner as the Potato disease attacks the Potatoes, and for both I have failed to find or hear of a remedy. I may mention that Purple King and Crimson King suffered the most.

I am glad to say I have not seen any signs of the disease this season. The plants received just the same treatment last season as they have this; they occupy the place where the Verbenas have stood for several years. I hope some of your correspondents will be able to find out a remedy in case of future attacks.—S. W. J.

THE RIVERS PORTRAIT.

At a meeting of the trustees of the Lindley Library held on the 15th inst., Dr. Hogg presented, in the name of the subscribers, the portrait of Mr. Thomas Rivers, of Sawbridgeworth, to be held in trust by them as part of the property of the Lindley Library. The portrait, which is a beautiful picture and an admirable likeness of Mr. Rivers, is now suspended on the walls of the large ball, on the right of that of Dr. Lindley. It was painted by Mr. I. T. Peele, of Grafton Street, Fitzroy Square, and bears strong evidence of his high attainments as a portrait artist.

REPORT ON THE STATE OF THE VINES—PRACTICE AND PROPOSED ALTERATIONS.

[The following report from a gardener to his master contains information which may be useful to others who possibly may be in somewhat similar circumstances. Gardeners should keep in mind that a mistake, or an unfortunate termination to a previously unexplained measure, may be to them of serious consequence.]

With the exception of two White Frontignans and one Buckland Sweetwater the Vines are all Black Hamburghs.

The Past.—About fifteen years ago a new border was made, the old Vines being lifted and some young ones put in. The border is of the same length as the houses, 10 feet wide and 3 feet deep, including at the least 6 inches of broken stones and rubble. It cannot be widened. The soil is yellowish loam, not turfy, of medium texture, and mixed with some charcoal. The Vines have not been forced; they have been worked on the spur system and have borne uniform crops of excellent Grapes with but little shanking. The border has had frequent surface-mulchings of fresh soil and some sweet decayed manure. It has been covered with wooden shutters during the winter. I should add that immediately in front of the border runs a gravel walk, and beyond the walk kitchen-garden ground. The roots are not confined to the border by a partition wall of any kind.

The Present, commencing 1869. During this year I observed that the spurs pruned the closest produced Grapes inferior in size of bunch and general finish to those hanging from spurs which had been left longer at the winter pruning. During the summer I noticed the growth was unusually vigorous and rather coarse in wood and foliage. An abundant yet careful amount of air was given, and the houses never entirely closed at night; indeed they were, as they always are, worked at a low temperature. The Vines were allowed to carry as much foliage as possible, carefully preventing overcrowding. The shoots were stopped at two or three leaves beyond the bunch, and from this point the laterals were kept timely and continually pinched. My opinion at the time was, that the excessive growth was attributable to the roots passing under the walk and into the garden. I looked but could find none, still, however, hold

ing to my opinion. At the winter pruning, taking advantage of my above-mentioned observations, I purposely, and I may add fortunately, left several spurs longer than usual, and also in places laid in some young wood. This year's crop has been as good as usual, but the long spurs and the young laid-in wood have produced it. There has, however, been rather more shanking than usual, but still to no serious amount. One thing is clear—had I pruned the Vines on the usual short-spur system the crop, if it had not been a failure, would have been very far below the usual standard. The strongest and most vigorous Vine in the house, and so pruned, produced scarcely any Grapes at all.

Another search for roots in the garden beyond the walk, and I found them in plenty at depths of from 1 to 2 feet. Most of the roots found are healthy and fibrous, some others are not so. I would particularly observe that the garden ground in which the roots are now ramifying is good to the depth of 2 feet, then comes a foot of sour hungry loam resting on a bed of soft buttery-looking white marl. I now look at the Vine border proper, the 10-feet border. At a foot below the surface I begin to find roots, but as destitute of fibre as any other water pipes, for this is what they amount to. The feeders are in the garden over the walk foraging for supplies to send up by these channels to supply the Vines. The Vines now get little or no sustenance from the 10-feet border. A prime cause of the Vine roots leaving the border may reasonably be attributed to three excessively dry summers driving the roots outwards and downwards in search of the required moisture which fell in such diminished quantities from the clouds, always remembering that they were naturally predisposed to ramble in search of fresh food, having during their growth extracted from the narrow border the particular aliment necessary to their sustenance. In the last-mentioned premise, I would incidentally mention, is to be found the reason why young Vines will not grow in old Vine borders. I have as briefly as possible, consistently with clearness, noticed the past and present, and now proceed to

The Future.—To insure good crops of good Grapes in the future, a different system of management must be adopted. As long as the roots were confined in the border and near the surface, the spur system was right. There was something like a balance between root and branch. Now that the roots have taken a wider, almost unlimited range, the reciprocal action of root and branch is destroyed. The canes are 18 feet long. The roots are found 36 feet from the house, and it is quite probable that they extend further than this. The balance lost must be restored, or the Vines one by one will probably follow the example of the one which is the most vigorous, and refuse to bear good fruit. There are two ways of restoring the necessary reciprocal action—one by commencing operations on the roots and branches conjointly; the other by top or branch management alone. The latter plan is the simpler, being the system of letting a Vine have room to extend itself by cutting away the other Vines as it grows, and so letting it occupy several rafters or a whole house. The branches would soon be on an equality with the roots, and I am sanguine good Grapes would be the result. The drawback to this plan is the buttery-looking white marl subsoil, which suggests the question, Would the roots penetrate into it? If so, shanking would inevitably ensue. Whether the roots would enter this uncongenial soil is to me problematical. I think they would not, considering they have the range of 2 feet of good soil above it. I, however, hesitate to recommend it on my sole responsibility on account of the important question it involves. The former plan of root-and-branch action conjointly is to remove the soil from the border, entirely laying bare the fibreless roots, and to make them fibrous by covering them with 5 or 6 inches of proper soil, and this again with heating material of manure and leaves to the depth of 2 feet, or sufficient to give a gentle warmth to the fresh soil above the roots. This warm fresh soil would induce the emission of a network of spongioles from the old roots, essentially of a health-inducing and fruit-producing character. Surface-feeding roots of this nature predispose the top growth to short-jointed fruitful wood, and the spur system of pruning is quite in harmony with the practice. This, with young canes brought up and worked on the spur system, in conjunction with a general system of proper management, never fails to bring good Grapes. I do not say that one covering of heating material would answer the purpose of always keeping the roots near the surface. It might be required in the first instance for two years consecutively, and then, perhaps, every alternate year to keep the Vines in permanent good order. The limited number of Vines, and the demand on them, do not permit of experiments involving the risk of a loss, or partial loss of crop.

The two methods put side by side stand thus—

1st. Letting the roots alone, and working the top on the long-rod or extending system. This I am certain would answer, except on account of the white marl subsoil, and, perhaps, in spite of it.

2nd. Raising the roots by surface heat and working on the short-spur system. This involves more labour and material. It would answer.

Taking everything into account, which is it to be? What say the Editors, or their practical correspondents?—W.

[Many years ago the modes of pruning Vines were prominently referred to, and they have been noticed frequently since. It has been shown that with all the advantages of the short-spur system when the roots were near the surface, long and short rods in succession answered better when, from depth of roots, the wood was apt to be stronger, but pithy and long-jointed. The example you adduce of the vigorous but comparatively barren Vine is a case in point. If the strong wood from that Vine were well ripened we have no doubt it would be very productive the following season; but then we should be doubtful if spurring would answer in the succeeding year if the extra vigour showed the roots were deep and in moist soil. We do not place so much importance on the extension of roots and of branches being reciprocal. We think it very likely that there are more fibres in the original border than supposed, and if not, then the mere length would be of little importance if so much of that length were destitute of feeders. We have no fault to find with the gradually-extending system, so as ultimately to have a few Vines, or only one, in a house; but we have no faith that the mere extension of the stems will alter the character of the Vines, if, as you suspect, the roots, owing to the dry summer, have gone down in search of moisture, as we believe that then, as well as now, the young wood successions would be better than close spurring—that is, supposing you make no other alteration, except merely giving the Vines more headway.

From the examination of the roots in the garden they do not seem to be too deep there; but if allowed to get dry they will go down after moisture into the uncongenial soil, and that will be best prevented by surface-mulching and surface-watering when necessary. You are not likely to have excess of moisture with this marl bottom at 3 feet from the surface, and unless the roots, from want of moisture above, are induced to go into it, we have no doubt you will have good Grapes on the short or long-rod system instead of close spur-pruning. Instead, therefore, of adopting one of the plans you propose as first and second, we should be inclined to adopt both. We would first allow the roots in the garden to remain as they are, and encourage them to keep near the surface by mulching and watering when necessary; and secondly, we would carefully remove the soil on the old border down to, but not so as to hurt, the roots, cover with a few inches of gritty fresh soil, and then add a little loam, with a slight hotbed over it as you propose.]

SEEDLING PINE APPLES.

I BELIEVE there are not many gardeners who have had much experience in raising and cultivating seedling Pine Apples. It is a subject seldom spoken of or commented upon in the horticultural press. It so happens that I have thirty-four distinct varieties of seedlings under my care at the present time. In many instances their characters are very distinct from each other, and easily detected at first sight by cultivators of the Pine Apple. One of them is likely to become the tallest and most robust in cultivation, while at the same time it forms a plant of handsome proportions, its leaves being as straight as an arrow and covered with an unusually dense and light-coloured bloom, the spines being wider apart than in any other variety with which I am acquainted. This plant has been grown under great disadvantages, as I was never able to keep the bed in which it was plunged at a temperature of more than 60°, in consequence of the hot-water pipes settling down late in the autumn, and, owing to circumstances, they could not be raised to the proper level till the following spring. The sucker from which the plant was grown was weak, having been taken from a sickly plant which had to be stripped of every leaf, and scrubbed and otherwise cleansed to get rid of scale. The small sucker made its appearance from this roughly-handled

stool late in the autumn of 1868; and on the 2nd of January 1870 I cut a fruit from it weighing almost 7 lbs. On the same date I cut a Smooth Cayenne 5½ lbs. weight, and sent them both to the dessert on the same day. When the seedling was cut, the juice flowed from it, covering the bottom of the plate as if a sauce had been poured over it. The Smooth Cayenne, in comparison with the seedling, was dry and juiceless. True, the latter grew in the row of plants next the outside of the bed, and probably had even less bottom heat than the seedling.

I may state that the dwarfest of the seedlings does not measure more than 12 inches in height, and it is expected to show fruit very soon; so that in one batch of seedlings we have the extreme of stature at least, showing that the Pine Apple from seed is as variable as any other fruit. So far as I am aware, the Pine Apple in a cultivated state seldom forms a perfect seed; but exceptions in this case as in all others occur now and then. The fruit the seed was taken from in this instance was a Montserrat grown by my predecessor here. Thirty-four varieties became strong enough to be pricked off, grown on, and fruited by the late Mr. Stevenson. The Montserrat fruit in question was cut in 1860, and was pronounced bad, or not in good condition, and when shown to Mr. Stevenson he discovered the seeds and sowed them. Many fruit of their first produce he sent to the London Fruit Committee. Of some of them favourable reports were given, but a good many of them were pronounced indifferent, while others were considered to be in cultivation before; but I do not think the Fruit Committee had a good chance of forming a fair decision, as the characters of the seedling produce were not fully developed, some of the fruit weighing only 1½ lb., and the heaviest 4¾ lbs. Some may consider that time has been lost in planting these a second time; but when all the leaves have to be sacrificed, and the stumps only kept to raise a clean stock, loss of time is accounted for. I hope to fruit more of these seedling varieties this season, when a little more about them may be made known.—J. Hunter, *Lambton Castle Gardens.*—(*The Gardener.*)

MASTER AND SERVANT.

Will you advise me as to the course pursued in the event of a gardener, who is a weekly servant, becoming ill and often unable to work? When able to work he is industrious. He is in a club, from which he receives 15*s.* weekly, and I have hitherto paid him his 22*s.* during his illness, adding 5*s.* to enable him to find an occasional labourer, but I am sorry to say this was but seldom. He is again ill with inflammation of the lungs—very ill, and, of course, cannot work for six weeks at least. I am a medical man, and so can give him all he requires; but shall I be doing a mean or unkind thing in providing what labour I feel necessary, and handing him over the surplus weekly? I am not rich, my garden being my only extravagance. What you advise I shall do. Again, he intimates that my work has caused him to be so often ill.

My garden is an acre and half, one-half kitchen garden, one-quarter lawn, with half a dozen small flower beds, the rest borders with shrubbery, &c. We have also a cow. My coachman is a handy man, and assists materially, and I do not look on. There is a greenhouse and small stove house. He is only a plain gardener, so there is no early growing of flowers. Is this too much for one man? If so, do I pay enough—22*s.* weekly? He has his tea in the kitchen, any vegetables, fruit, and milk not required, and a glass, or even two, of beer daily. If so, could I obtain a fairly good man able to grow a few ordinary flowers, as I adore them, in winter? I am not inclined to change unless he wishes it. Being a nervous, fidgetty being, must be the excuse of the one who signs—Spero.

[If you are not rich in this world's wealth, we may congratulate you on possessing the more enviable endowment of a kind, warm heart that can sympathise with the sorrows and afflictions of others. In one sense we are not at all surprised, for among all ranks and classes medical men stand separate and distinguished for their kindness and philanthropy. Alas! too often their self-sacrificing labours are apt to be forgotten when the affliction has passed away. Were there more of such kindly consideration as you evince, the late Judge Talfourd, if he were now alive, would not have to say that the great want in this England of ours was a want of seen and felt sympathy between all ranks and classes of the community.

On the whole, then, instead of giving you our advice, we would rather that you took the counsel of your own kind heart, and acted according to its promptings. A great many, however, are not able to do so; if they pay for labour, they must have the labour in return, and, therefore, without going to any extreme, we will allude to a few of the matters suggested by your letter.

1st. An acre and a half of ground, comprising half an acre of kitchen garden, a quarter of an acre of lawn, and a few flower beds, the rest in shrubbery, with a small greenhouse and flower stove, are quite enough for one man; too much if early things were desirable, not at all too much if fully the half were in shrubbery, needing little attention. All depends on what is wanted. There is an old saw about a man to an acre in a garden, but we have seen gardens in which a man to an acre would have little to do, and we have seen other gardens where, from flowers, forcing, &c., half a dozen men would be hard-worked.

2nd. As to the matter of assistance from coachman or groom, unless that is thoroughly understood and acted upon from the first, such help will generally be more found in the promise than in the performance, and what little we have seen would lead us to the conclusion that it is best to keep every department to itself. We are well aware that this cannot be done in many comfortable small establishments, but in such cases the coachman, groom, or others, should clearly understand they are to help the gardener. If that help is not to be depended on, it would be much better if the gardener had a boy or lad entirely under his own control. Unless the people in the stables have a zest for gardening, or know they must, as a matter of duty and service, give so much of their labour in the garden, our opinion is that all their labour and help would be of little value, and would be pretty well neutralised by the ill-feeling and the heart-burning fostered in consequence.

In many places of much greater extent, where several men are ostensibly employed in the garden, and the gardener has the name of having such a number of assistants, there is often infinite discouragement arising from the custom of taking men from the garden whenever they are wanted for anything about the house or the establishment—going errands, attending shooting parties, &c. It is a very common thing, if the gardener fall at all behind in his work, to be told, or rather to have it said of him when he is not present, that he has so many men, and yet in the most trying times he could not calculate on having half that number when he most needs them. Under such circumstances true economy and mutual satisfaction would be realised by keeping each department to its own separate duties.

3rd. We consider that the wages, with the other advantages mentioned, are very fair for the place, and more especially if lodgings are found. If not found, and flowers in winter were desirable, then we think a trifle more should be given to an industrious, clever man. We give this opinion more in consonance with the general verdict on such subjects than our own unbiassed ideas on the subject. For such small places good men may be obtained at from £1 per week, and many owners cannot afford to give more. But in this respect we hold the opinion of the late Mr. Loudon, that if the very most is to be made of a small place, you must get a first-rate man and pay him first-rate wages. In such a small place, to make the very most of it, he would have to work hard with his hands, and his brains, too, would be well exercised. In a large place, provided such a man were gifted with the faculties of order and organisation, he would have to work with his intellect more than with his hands.

4th When a man is at a distance from his own home it will be a great advantage to let him have his tea, and, if he likes it, a few glasses of beer, &c., on the premises, but, except in such circumstances, or when there is a stated allowance, it is best to make the payment entirely in money, and do away with all such allowances from the house. They often foster a kind of craving in some men, and lead them to be dissatisfied when actually they are well used.

5th. In the case of a weekly servant we do not suppose there is any legal claim upon you to pay wages when a man is unable to work, and more especially after a week's illness. We are glad to say that many in high positions act as you have done, from a kindly feeling rather than from anything like legal compulsion; many others, however, act quite differently. With them the rule absolute is, "No work, no pay," and we are sorry to say that there are cases that justify them in coming to such a conclusion. However, it is wisely ordered that kindness generally brings its own reward; and it should not be forgotten that what is a mere trifle to a wealthy man may be a matter of next to life and death to a poor man.

6th. We do not consider, in the circumstances, in attending to your afflicted gardener's medical wants, and other wants we have no doubt besides, that you would be doing "a mean or unkind thing," quite the reverse, if during his illness you found and paid for the necessary labour, and gave him the surplus weekly instead of his full wages. As already stated, this should be received as a matter of kindness rather than as a matter of right. We are a little in doubt as to your meaning, when, in speaking of paying your gardener his weekly wages when ill and adding 5*s.* to enable him to find an occasional labourer, you continue, "I am sorry to say this was but seldom." If the extra labourer was but seldom employed, then we would rather have our suspicions than express our thoughts.

Again, considering the way the gardener has been used in his illness, there is something rather repulsive in his intimating that "it is my work that has caused him to be so often ill." This may be merely the utterance of a morbid, melancholy feeling, the result of trouble and affliction; but no man with head and hands is required to stop in any place where the work is such as he knows to be ruinous to his health.

Lastly, knowing nothing of the circumstances but what you tell us, and hoping that your servant is too upright to be swayed by any unworthy considerations, still having the regular weekly wages in illness, and receiving a weekly allowance of 15*s.* from a club, would rather be a temptation in some men's way not to be in too great haste to be well and strong. It is sad to be obliged at times to look at the

dark side of poor human nature. Judging merely from what we have seen and known, we are not surprised that the managers of the best benefit clubs are careful that the money to be received in illness should be considerably less than what the members would receive as weekly wages; nor, again, have we been surprised that such managers have complained that some members when ill, and who from working to kind employers received a good part or the whole of their wages, as well as the allowance from the club, never seemed to be in a hurry to grow well. Alas! that there should be so much truth in this as to lead some benevolent employers to restrict their generosity in such cases, so that what they give and the allowance from the club may not exceed, or exceed but little, the usual weekly wages. True, "when a man is ill he needs more," but the scheming and the sponging often injure the truly deserving. In conclusion, then, every separate case should be judged on its own merits. We do not think you would act at all unkindly or meanly in adding so much to the club allowance, and paying for the necessary labour; but, as we said at first, we feel convinced your own heart will be your best adviser.—R. F.]

LEICESTER SQUARE FOR A FLOWER MARKET.

TO THE COMMISSIONERS OF THE METROPOLITAN BOARD OF WORKS.

GENTLEMEN,—Having seen in one of the papers that you contemplate taking under your direction and management what may justly be considered one of the metropolitan nuisances (I allude to Leicester Square), I, from my long and practical experience as a nurseryman and wholesale grower of florists' flowers, beg to submit for your consideration the appropriating of so eligible a situation to what is so much required and really wanted—namely, a metropolitan flower market.

I have attended Covent Garden as a florist regularly since the year 1836, during which time I have always considered that we were very much in want of a flower market, similar to those of our neighbours on the Continent, where nurserymen and florists might send for exhibition and sale their horticultural and floricultural productions; where ladies also would visit to select and purchase plants to decorate their balconies, flower boxes, and other modes for ornamenting their windows, &c. When considering the subject for more than twenty-five years past, it has been a matter of great surprise to me, and a very singular circumstance, that a spot so well suited for that purpose as Leicester Square, from its central position, should not have been appropriated to that purpose years ago; and I doubt not, gentlemen, but you will agree with me in considering the situation admirably adapted for that purpose.

Moreover, during my leisure hours of the long winter evenings, fully fifteen years ago, I amused myself by preparing a rough sketch of what I considered suitable, which represented a glass dome, in the centre, not more than 35 or 40 feet high. This I intended to be used as an aviary, a bazaar, winter garden, or promenade; and once or twice during the London season and summer to have a Rose or general flower show. By this arrangement I dispose of the surface or upper part of the space occupied by the dome, under which I would remove the whole of the soil to the depth of 9 or 10 feet, which space might be used for cellars, or used, as the French people do the caverns round Paris, for the culture of Mushrooms; and, if so used, I am confident it would soon be rented to advantage.

Having disposed of the centre, my arrangement for the disposal of the outside frontage of the square, according to my rough plan, would be as follows:—To appropriate the whole to a series of ornamental shops similar to those in the Grand Row, Covent Garden Market. Over each I would have one or two sleeping rooms, with a good kitchen in the basement; and in front of the shop alluded to I would have a space covered by a glass roof of from 150 to 200 or more superficial feet; this should be heated by hot water, or some other mode, and connected with the shop, to be used as a place to exhibit floral subjects for sale. It would not be necessary to have these glass erections more than 12 or 15 feet high, but they should extend to the very outside boundary, and completely encircle the market, and if tastefully designed would be interesting objects to look upon from the adjoining houses surrounding the square.

These glass erections I intended to be used not only by the florists and nurserymen in the vicinity of London, but by those residing within a circle of 20 or 30 miles of London, who, I doubt not, if these erections were let at a moderate rent, would gladly avail themselves of this depôt for the exhibition and sale of their arboricultural, horticultural, and floricultural productions; as it has been, and is, in my opinion, a great and serious loss to all country nurserymen and florists living at a great distance from London, who might be the introducers of new species or varieties of horticultural and floricultural subjects, that they have not a place in or near London where they may perpetually exhibit their valuable novelties, and where the botanist, florist, naturalist, and amateur may see and admire the wonderful works of the great Creator manifested in the vegetable kingdom.—J. W. THOMSON, F.R.H.S., *Florist, Penge.*

WEATHER PREDICTIONS.

I TRUST your correspondent, Mr. Robson, will pardon me if I point out that he has made several important mistakes in his letter on page 101. If he had not made these mistakes he would have found that the Linton Park observations were not "all at variance" with the theory I "promulgated."

1. Your correspondent has not taken the Linton Park or the "Greenwich mean temperature of August to October" into due consideration.

2. He has omitted to notice that there is an important difference between the mean rainfall of Linton Park and that of Greenwich during the first seven months of the year. This difference renders it necessary to raise the limit from 10 inches to about 10½ inches when applying my law to past years at the former station.

3. If your correspondent had carefully read the letter of "AMATEUR," at page 85, or my letter in the valuable "Meteorological Magazine" referred to, he would have seen that I explained what I meant by the expression, "a remarkably severe winter." I said, "That is, the mean temperature must be very considerably below the average." In this respect the winter of 1866-7, as well as that of 1860-61, was not very severe. In the winter of 1866-7 the mean temperature of December to February inclusive at Greenwich was more than 2½° above the average of ninety-nine years, and January to March inclusive 0°.4 above the average. Mr. Robson must therefore allow me to say that he is remarkably inaccurate in speaking of that winter in connection with my law, as "exceedingly severe."

4. Mr. Robson's assertion that I used the word "probably" in connection with my prediction of the winter of 1870-71 is incorrect. I spoke with certainty. I said that "it must be remarkably severe." A law which has never failed in a hundred years at Greenwich justifies this positive form of prediction. For many years past I have, with the aid of apparently infallible laws, been able to predict the summer as well as the winter seasons. In a paper read before the Meteorological Society in April last I stated a law, according to which the summer of 1870 should be warm, and on the 13th of May last I predicted in a local paper that the "coming season must be a good one." I also stated that the summer would certainly be fine. I commenced predicting summer and winter seasons in 1864, and since that time have not had one failure with regard to them. These facts show that "line of investigation" referred to by your correspondent, "AMATEUR," has been followed up for seven years, and they prove (in opposition to the statement of Mr. Robson) that, as far as summer and winter seasons are concerned, there is no uncertainty in my weather predictions.—GEORGE D. BRUMHAM, *Barnsbury.*

FAILURE OF VERBENA CUTTINGS.

I HAVE been much interested in the correspondence in the late numbers of your Journal about Verbena cuttings, and I wish to endorse the opinion of your correspondent that there has been some unusual disease prevalent amongst them this season.

I am generally successful with Verbenas. Last summer mine were the admiration of all beholders, but I fear I shall have no show at all this year. The cuttings rooted, and I potted them off as usual, but one after another they blacken and die. I have now put all the survivors into a nice fresh hotbed, supposing the failure to be owing to the unusually low temperature for the last three months. They do not seem to be much the better of the change at present. The healthy ones (chiefly Lord Raglan and the commonest kinds) are growing, of course, but the sick ones get worse and worse, and will evidently die.

In this mild climate (Pembrokeshire) Verbenas have lived with us in the open air all the winter, year after year; but, alas! these happy seasons for our half-hardy favourites seem now like grandmothers' tales of the good old times that used to be "once on a time" long ago.—C. J. S.

[I hope before this reaches "C. J. S." that a change for the better will have taken place in the Verbena plants, which may still be reviving; and, as there is a good deal of time yet for propagation, that she will be able to make up her stock to the quantity wanted. If it be any consolation for her to know it, I may say there seems to be a very general complaint of Verbenas having kept badly this winter, and inquiries for cuttings are made in all directions. The cause is, no doubt, what "C. J. S." justly assigns—viz., the low temperature, and, in addition, the want of sunshine; for during the greater part of both December and January, and of February up to the present time, the sky has been almost entirely sunless; even the sharp frosty days were mostly dull, and forcing has only been accomplished at a great expense of fuel. In keeping Verbenas through this dark period I have, however, never been more successful than during the present season, only we do not grow these former favourites of the flower garden so extensively as some do, and have not so many kinds, chiefly confining our growth to three or four varieties. Nevertheless, I have others, and they have all kept well, only they have had a better position than they have sometimes had in former years, for this season I had an opportunity of giving them a place close to the glass on two shelves at the back of a vinery, which was kept a little warmer than an ordinary greenhouse, and this elevated position, where

the air could circulate on all sides of them, no doubt enabled them to withstand the destructive influence of the long dark period we have just passed through. Had they been, as usual, wintered in a cold frame, with only coverings to keep out the frost, most likely I should have had to bewail the loss of the whole, for I find the Geraniums in boxes, which are here far more important than Verbenas, have kept much worse than usual, owing to the dull weather and limited heat supplied. I have long been of opinion that to keep Verbenas well they must be kept growing, for it is no easy matter to start them when once they become fairly stunted and diseased.

My mode of managing them is usually to take off cuttings from the middle to the end of August, and to strike them in some shady place without heat, so as not to encourage too much growth at top. I also use larger pots than most people; the size called sixteens in the trade is that which I generally adopt, and the cuttings remain in the pots all winter, yielding successive batches of cuttings if all go on well, but I have often been unfortunate and lost a great many, especially when the pots have had to stand some time on the ground in a cold pit, where both heat and a good circulation of air have been wanting. Now, although Gazanias and, I believe, Nierembergias will endure this with impunity, and, in fact, may be covered up for weeks, as some of mine have been, Verbenas will not. Warmth and a free circulation of air are necessary for them, and what is also equally important, insects of all kinds must be kept down, and however clean and healthy the plants may appear at the time cuttings are taken off for propagation in early spring, we nevertheless immerse them in a sort of decoction of tobacco about the colour of porter. Immersion for a couple of minutes or so will destroy any green fly that may be remaining, and does the cutting no harm. A basin or other vessel of this liquid always accompanies those putting in spring cuttings. The first lot of cuttings was put in on February 6th; at this season they are mostly put in in boxes—at least all the kinds propagated to any extent, and a four-light frameful of such cuttings, after they have been in a week, all look like growing, the heating material being merely a mixture of dung and leaves.

I have often been short of plants to propagate from at this season, and our present ample supply is mainly owing to the winter stock having had a more favoured position than usual during the dark days. If I had only a few plants, and wanted to increase them to the greatest possible extent before planting-out time, I would prepare a nice, warm, dung hotbed, with suitable soil in it, as if for Cucumbers, and after having dipped the Verbena plants in the tobacco water previously described, I would turn them out of their pots into this bed, not disturbing the ball if it could be avoided, and allowing the plants to grow till they completely covered the bed before taking off any cuttings; then any reasonable quantity could be had, for I believe much harm is done by cutting a plant too early, and where the root has room to grow the top ought to be allowed to do so also. This I fear is not in the power of "C. J. S." to do, but I advise the bath nevertheless, a warm site if it can be had, and if the plants are in small pots, a few of the best might be shifted into larger ones, and growth will likely follow; at the same time do not remove all the soil from the roots, otherwise time is lost, but repot the ball entire, even if there are a great number of plants together, and success may yet reward the labour.

Much has been said on the wintering of plants for the flower garden, and the various modes adopted for the purpose; there are, nevertheless, plants which can only be kept over winter with a much greater amount of means than most amateurs have at command. In August beds of Coleus look well, and are deservedly admired, but the plants are not easily kept over the winter without a structure approaching a plant stove in heat; Alternantheras are still more difficult to keep in a cool place; in fact, they are usually miserable-looking objects in January, and many are lost. Fortunately both they and Coleuses can be rapidly propagated in spring, and as neither are wanted very early, their propagation may be carried on later in the season than that of the Verbena and similar plants. I have sometimes thought of writing an article on keeping bedding plants in winter, commencing with those which endure the greatest amount of cold, and going gradually upwards to such as require the greatest amount of heat; if I did so, I would place Verbenas in a warmer temperature than they often receive, for although I have frequently taken cuttings in spring from plants that have stood out all winter, I have often lost cuttings in a way that I could not account for, except on the ground of absence of light, heat, and fresh air. With disease, excepting mildew, I have not been much troubled; nevertheless, the failures of Verbenas towards the end of August, in dry summers, have been so frequent that I grow comparatively few of them.

In closing these remarks on this once popular plant, I would ask the reason why it affords a much shorter continuance of display than it did twenty years ago, when such old kinds as Emma, Atrosanguinea, Tweediana, Beauté Suprême, and others might be reckoned on as sure to last the whole season? The failure of Verbenas to do so has led me to very much limit the number planted, and a visit to any public or private garden of importance reveals the fact that this once-popular flower no longer holds the place it did, and something more than the difficulty in wintering it is the cause.—J. Robson.]

WONDERS OF AN AMATEUR.

I wonder if the proposition laid down in two recent numbers of one of your contemporaries (*apropos* of Camellias) is a correct one—namely, that peat and loam mixed together in a pot, become, after a certain time, injurious to the plant contained in it, by the action of the acid in the former upon the alkali in the latter. If so, the authorities on such matters, from Paxton down to the editors of the "Gardeners' Dictionary," have been but "blind guides." In the fourth vol. of "Paxton's Magazine," 1838, which I took up by chance this evening, I see that, of the plants which are represented in the first nine coloured plates, we are advised to grow no less than six in a mixture of "peat and loam," and in the "Gardeners' Dictionary," published exactly thirty years later, of the first nine plants of which the culture is described in detail, we have the same obnoxious mixture recommended to us in five cases. With such authorities a humble amateur cannot at once imbibe the new theory, while at the same time the extreme and undeniable difficulty of growing Camellias makes me grasp at any explanation of my failure.

I wonder why the use of the pot saucer in watering plants in pots is not more insisted upon in gardening manuals. I look upon it as not only a useful, but an indispensable adjunct, and especially for two classes of plants—1st, bulbs, which are started in dampish soil, and are not watered again till their shoots appear, such as most of the Iridaceous tribe; and 2nd, succulents, which are kept almost dry from October till February or March. The soil of the pots which contain plants of these two classes, can never be so rapidly or satisfactorily saturated as by the use of the saucer. It seems only reasonable, too, that plants which are dried by the action of the flue in a conservatory should receive moisture at the end of the pot which is nearest the source of heat, and I venture to say that anyone who examines the bottoms of pots which stand over or near the flue will find, especially after the great amount of fire heat which this season has occasioned, that the lower portion of the soil where the young roots should be is nearly dust dry, while the upper inch or two of the soil is saturated with water, and perhaps sour and covered with moss. The same principle which induces us to water pots from the top when standing out of doors, below the source of heat, should direct us to water from the bottom when the pots stand above the heating medium. Moreover, a certain tribe of plants which grow on hills, such as Primulas, Auriculas, and Calceolarias, even in their natural state, what with melting snow and mountain streams, derive at least as much moisture from below as from above.

I wonder, too, at many other things, but, being a man of business, I have no more time to spend in writing down my wonders.—Rush.

NOTES MADE DURING A TOUR IN IRELAND.

No. 6.

ROCKVILLE, THE SEAT OF THOMAS BEWLEY, ESQ.

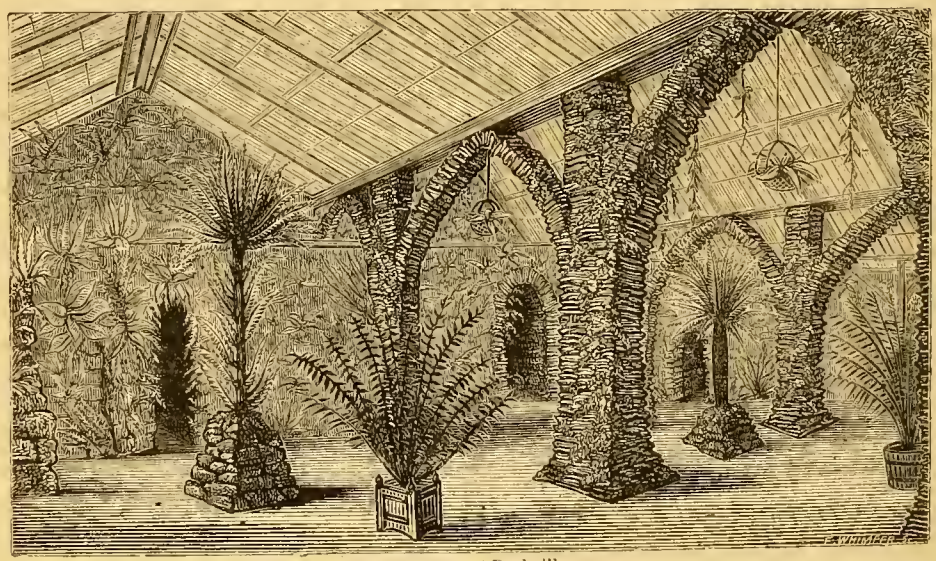
The splendid service of mail steamboats from Holyhead for Dublin land all their passengers at Kingstown, the pretty and fashionable Irish seaport, whence they are conveyed by rail to Dublin—a distance of ten or twelve miles—through a lovely country. Landing at Kingstown, one is very favourably impressed with the beauties of Ireland; all along the line of railway there is the beautiful Bay of Dublin, one of the most glorious that can be imagined, bounded in the distance by Hove and the craggy rocky promontory called Ireland's Eye, and every now and then we catch a glimpse of Dublin herself lying placidly sleeping in her misty shrond, with here and there a tall chimney or a church tower peeping forth. On the other side of the line lies a beautiful country, richly clad, finely

wooded, and studded with numerous pretty villas and well-kept gardens. Here, I fancied, as I sped along, will be found the retreat of many of Dublin's rich citizens, and gardening will be found flourishing. Whilst I was musing thus, the train slackened speed a little on nearing the first station. Is it Blackrock? Yes, Blackrock, where resides, as I was very shortly informed by my friend Mr. Robertson, the great Mr. Bewley in his world-famous gardens. To return to Blackrock was, therefore, one of my first duties. Taking advantage of a friendly car at the station, the distance—about a mile—of rather uphill road was soon traversed, and I was at the garden gates.

There is at first sight nothing at all imposing in the appearance of this place. Close to the public road stands Mr. Bewley's residence, having in the front an open space of grass, with numerous beds tastefully formed and well filled with the usual bedding materials. This is bounded on two sides by ranges of hothouses, giving it a very circumscribed appearance. The extent of the place is altogether very limited, yet it is rich and full of interest. In every nook and every corner there is something worth seeing; the extent of glass houses is very great, and some are of very fine construction.

Mr. Sayers, the very intelligent gardener, being on my arrival engaged in showing a company of Irish belles his treasures, I had time to cursorily survey the exteriors of the various buildings, the doors being all securely fastened, and to note some of the arrangements of the ribbon borders, &c. One border, alongside what was once the orchard house, was planted as follows, and I thought it looked very effective. Line 1, Cerastium Biebersteini; 2, Pelargonium Golden Chain; 3, Iresine Herbstii; 4, Pelargonium Flower of Spring; 5, Purple King Verbena; 6, Pelargonium Rose Queen; 7, Centaurea candidissima; 8, Pelargonium Stella, with a tall backing. I was here again much pleased with several beds of Pelargonium Amy Hogg, the colour of which in the mass was most charming.

Mr. Bewley has been a great experimental horticulturist. It was at his establishment where the system of double-glazing the roofs of hothouses was first tried on a large scale. Greatly applauded and recommended as it was for a time, like many other new things, it is now condemned and almost forgotten. Even at Blackrock little can be said for it. Here, also, were erected the grandest of orchard houses, lofty span-roofed houses, where the trees—Peaches, Pears, &c.—were planted out and had to grow as in the ordinary open-air orchard; but success was not attendant, and most of the fruit trees have been removed. Vines still cover a portion of the roof. The Pear trees planted in another portion of the garden were laden with fine fruit. The orchard houses still exist at Blackrock, fine, noble, span-roofed houses, two of them, about 60 feet long, joined to either side of a broad span-roofed plant-house; but they are directed now to another use besides fruit-growing—that of ornamental plant-houses, for which purpose they are much better adapted. As orchard houses they were far too dark and heavy, fruit trees requiring as much light and air as can be given. The middle house of this group had a beautiful ground-covering of Selaginella, with a winding path from one end to the other, leading to the great fernery. In it were many fine plants, lofty tree Ferns, a very fine Theophrasta 10 feet high, a Dragon's Blood, and some groups of fine-foliaged Begonias, a large Fan Palm, &c.



The Fernery at Rockville.

Passing out through some low, narrow, dark rustic passages, I entered the great fernery, the fame of which has spread far and near. There is no question about the grandeur and magnificence of this house. It is a great square place, 60 feet by 48, covered with a double-glazed glass roof about 10 feet high to the bottom of the ridges, there being five spans or ridges in all, supported on columns enclosed in pillars of rustic stonework and rustic Gothic arches mantled and draped with Ferns, Mosses, and the coloured-leaved Begonias, the sides being draped in the same way, so that it looks like a great rustic cavern. In intermediate lines with these supporting pillars are placed tall specimen tree Ferns of majestic character, grouped round their base with smaller varieties in rustic style. The appearance of the whole is very grand but very sombre, rather too much so for showing off the graceful forms of many of the beautiful Ferns. It impresses one with a certain feeling of awe, as when inspecting the ruins of a great abbey, to which, indeed, this fernery may not inaptly be likened. At one end there is a rustic stone staircase giving access to a high pathway along the end, whence one can look down upon the lovely scene, and from which the tree Ferns are seen to great advantage. It is beautiful to look up at a majestic Fern; it is much more so to look down into one and to observe the uncoiling of the young fronds. The arrangement of the house is simple yet noble; there is little crowding, and everywhere the Ferns are growing in the wildest luxuriance. To enumerate, or to give any idea of the character or number of the noble plants is next to impossible. The tree Ferns are wonderfully fine—Cyathea medullaris, with a 12-feet stem and fronds 8 feet long; Cyathea dealbata as large; Cibotium princeps, 12-feet stem, very beautiful; Dicksonia squarrosa, the various Alsophilas, &c. Shining like silver amongst the dark green of the various Fern fronds stood out the beautiful leaves of the Begonias of the Rex type. This served to lighten up the whole, and created a pretty feature. It is wonderful how well these Begonias succeed planted amongst Ferns on rustic stonework. Never have I seen them look so finely as where planted in this way at Rockville. Along the roof of this magnificent fernery rambled Hoya carnosa, flowering in the greatest luxuriance in all its chaste and waxy loveliness.

There are a great many other houses full of interesting plants, as Ferns, numerous Orchids in fair condition, fine-foliaged stove plants, Palms, &c., to which I can make no more than a passing allusion, but giving Mr. Sayers a world of care, and being very creditable to him. There is too much glass for the size of the place, requiring too great an expendi-

ture to maintain it. There are traces here and there of faded grandeur, as if at one time more means had been at command to keep the wheels moving. Nevertheless, the fernery at Blackrock is alone worth a journey to Ireland to see it as it now is.

In open-air gardening, besides the summer bedding plants already noted, which are to be found everywhere now, there are several quaint rustic walks near the boundary walls of the garden, the inner side being formed of a series of rustic stone Gothic arches like the sides of a railway; from these other rustic arches are thrown across the path to the wall at every 10 or 20 feet. The idea is pretty good, but as carried out it is scarcely bold enough in character to prevent it from being called "toy." These stones and arches, however, are the abiding place of a fine collection of British Ferns, not, perhaps, so much a collection of varieties as in number, and they looked well. Here, also, the Bamboo seemed to do well, and was particularly striking in character.

In another detached small garden were the fruit trees—the very trees, as I was informed, of Apples and Pears which had formerly been planted in the orchard houses. A line of fine pyramid Pears on Quince stocks, 8 feet or so in height, planted only 6 feet apart, were bearing very heavy crops of fine fruit. I observed Duchesse d'Angoulême, Glou Morçeau, Chaumontel, Louise Bonne of Jersey, and Marie Louise, as fine as ever I have seen them anywhere. Apples also were unusually fine, the crops immense on very little trees, conclusively showing that, if attention were given, Ireland could become one of the finest of fruit-growing countries.—B.

PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

Amaryllis Rayneri (Rayner's Amaryllis). *Nat. ord.*, Amaryllidaceæ. *Linn.*, Hexandria Monogynia.—Native of Brazil. Flowers lilac; leaves broad, sickle-shaped, and buff-edged.—(*Bot. Mag.*, *t.* 5883.)

Gladiolus dracocephalus (Dragon-headed Gladiolus). *Nat. ord.*, Iridaceæ. *Linn.*, Triandria Monogynia.—Native of western Natal, at the foot of the Drachenberg Mountains. Flowers lurid green, with lines of dull purple.—(*Ibid.*, *t.* 5884.)

Cirsium Grahami (Graham's Cirsium). *Nat. ord*, Compositæ. *Linn.*, Syngenesia æqualis.—Native of low valleys in New Mexico. Flowers bright crimson.—(*Ibid.*, *t.* 5885.)

Pogogyne Douglasii (Douglas's Pogogyne). *Nat. ord.*, Labiatæ. *Linn.*, Didynamia Angiospermia.—Native of California. Flowers purple, white-spotted.—(*Ibid.*, *t.* 5886.)

Cyrtanthera chrysostephana (Golden-crowned Cyrtanthera). *Nat. ord*, Acanthaceæ. *Linn.*, Diandria Monogynia.—Native of Mexico. "The flowers, instead of being disposed in a dense thyrsus, or in axillary cymes, as in most species of the genus, are collected into a crown-like corymb at the tips of the branches, and are of a bright golden yellow."—(*Ibid*, *t.* 5887.)

Double Tiger Lily.—"This beautiful plant has the habit of the old, well-known, and popular Tiger Lily, L. tigrinum, but is abundantly distinct from it as a garden flower on account of its double blossoms. The stems, which reach 3 feet high or upwards, are furnished with a thin covering of white cobwebby hairs, and clothed with numerous scattered lanceolate leaves, the lower of which are 4 to 6 inches long, the upper ones shorter and broader, and bearing the usual black shining bulbils in their axils. The flowers form a fine spreading panicle at the top of the stem, but in the smaller and weaker specimens the stem was surmounted by only a couple of flowers. In this respect the variety quite resembles its type, the weaker bulbs produce one or two-flowered stems, the stronger ones a panicle of numerous flowers, varying in number according to the degree of vigour. The individual flowers are about 4 inches across; but instead of the leaves of the perianth forming a single series, as in the ordinary Tiger Lily, there are in this double-flowered variety no fewer than six series of petaline segments, which, for the most part, are opposite, and lie over each other in their recurved position like the petals of the hexangular Camellias. The colour is a bright orange, densely spotted with blackish-purple spots.

"We are indebted to G. F. Wilson, Esq., of Weybridge, for the specimen figured, and which was exhibited by him on the 3rd of August last, at a meeting of the Royal Horticultural Society, when it received a first-class certificate. The bulbs were, we believe, imported from Japan by Mr. Bull.

"There are some other remarkably fine varieties of the Tiger Lily worthy of especial notice. One of these is the L. tigrinum Fortunei, introduced by Mr. Fortune from China, and cultivated by Messrs. Standish & Co. This is remarkable for its vigorous growth, and its immense head of flowers, which branches out in three successive series from the main stem, by which the blooming season is much prolonged. Another is the L. tigrinum splendens, introduced to public notice by M. Van Houtte, and which in its taller stature and ample branching inflorescence bears considerable resemblance to the var. Fortunei; but is said to differ somewhat in colour, and in the fewer and more prominent spots on the perianth. Both are grand additions to the group of hardy bulbous plants."—(*Florist and Pomologist*, 3 s., iv. 25.)

WORK FOR THE WEEK.

KITCHEN GARDEN.

Asparagus, make new beds with two-year-old plants, and fill up old beds. Plant out Mazagan *Beans* from boxes and pots; sow Long-pods. Plant out *Cauliflowers* from the frames or hand-glasses, the latter to have three or four left in each. Make a small sowing of *Celery* on a warm border. Sow *Leeks* for a principal crop. About the second week in March is an excellent time to sow the main crop of *Onions*. One of the prime objects in Onion cultivation ought to be to secure an early harvest, and this is best accomplished by elevated beds unmanured, unless the soil is very poor. The land should be selected in November, generally a plot which has had one scourging crop taken off after a good manuring. It is trenched and ridged until the early part of March, when, being levelled down, it is marked out into beds 42 inches wide, with 15-inch alleys. Before the seed is sown the beds are raised 6 inches above the ordinary ground level. When the beds have become dry the seed is sown, and they are trodden twice over until they are quite hard. A very light coating of soil is then strewed evenly over the whole. The narrowness of the beds enables the operator to weed clean with facility, and without injuring the plants. I have found that hoeing, by loosening the surface, exposes the Onions to the mercy of every storm, and if luxuriant throws them prostrate on the surface. Plants thus situated, having a greater depth of soil than usual, grow with a more sturdy character than those in highly-manured ground, whilst the elevation of the beds enables the warm July sun to penetrate a considerable depth into the earth, slightly checking late growth, and, of course, inducing the early formation of bulbs. *Pot Herbs* should now be sown, or plantations made from cuttings. Plant early sorts of *Potatoes* in a warm situation for earlier crops; a few may be first planted in boxes in heat, and transplanted to the open ground when they have vegetated. Those growing in frames should have air given freely. Sow *Savoys* for an early crop.

FRUIT GARDEN.

Proceed with pruning and nailing. If any planting still remains to be done, let it be performed as soon as the ground is in a fit state. Do not, as is sometimes done, over-manure; it is a great mistake to induce the production of gross, long-jointed wood in any stage of the existence of a fruit tree; wood of this description never becomes thoroughly ripened, and in the case of stone fruits, gum, canker, and premature death are sometimes the result, whilst from Pears anything deserving the name of a crop is never obtained till the gross habit induced by planting in over-rich soil is overcome. Ground intended for fruit trees should first be drained efficiently, and then trenched to the depth of 2 feet, and if the natural soil is found to be too poor for the health and growth of the trees, a sufficient quantity of fresh turfy loam should be added, but rich stimulating manures should not be used, for they are soon exhausted, and the trees are left to depend upon the natural soil for their support, and when treated in this way never give satisfaction.

FLOWER GARDEN.

Bourbon, Tea, and other tender Roses must not be disturbed for the present, but as soon as the weather has become more favourable let them be pruned, and the beds be manured and lightly forked. Roses, however, do not dislike a rather firm soil, and care should be taken not to injure their roots by forking or digging too much. The best manure for them is well-rotted cow dung which should be applied after carefully loosening the soil, and an inch or two of fresh mould sprinkled over it will obviate any unpleasant appearance it might otherwise present if kept near the surface. Auriculas, generally speaking, have suffered little from the past severe winter, and having braved the weather so well hitherto it would be a matter of regret should any collection suffer from lack of a little at-

tention at this season. As they are now beginning to grow and to throw up their trusses, they require the greatest attention of the cultivator; they must have plenty of air, be moderately supplied with moisture, and protected at night from the slightest frost or cold easterly winds, when the lights must be tilted the reverse way, so that the plants may not receive the least check in their growth. On the contrary, if the weather be mild they require all the air it is possible to give them. A gentle shower of rain once now and then is of great benefit. About a fortnight after the roots of the Ranunculuses are planted, they swell to their utmost size. While in this state, in the event of severe frost setting in, it is advisable to cover the beds with some dry litter to the depth of 3 or 4 inches, as the tubers are liable to be ruptured by the compression of the frozen soil. In the best prepared beds worms are very annoying and injurious, particularly in March. Lime water may be given with safety; apply it to their workings in the morning, and fill up the cavities in the surface of the beds with dry soil, which ought to be kept in reserve for the purpose. In the first week of April the plants will be through the ground. The strong-growing sorts are sure to lift a large portion of soil on the top of their foliage; let this be taken in the hand, broken, and carefully placed on the top of the crowns and about the necks of the plants. Should the grower wish his flowers to be of a good size, a top-dressing of three-year-old cow dung finely sifted may be applied round the plants and between the rows to the thickness of one-fourth of an inch; this has a most beneficial effect in keeping the beds level, and increasing the strength of the plants. Polyanthuses in beds that have been raised by the late frosts should be fastened, and a top-dressing of rich vegetable mould given.

GREENHOUSE AND CONSERVATORY.

A general dressing of the climbers should take place immediately. When it is desirable that they should bloom late in the autumn it will be advisable to prune late, even after the buds have commenced growing, on the same principle that the Moss and other Roses are successfully retarded by a similar proceeding. Fuchsias for general decoration, or as single specimens on grass, should be brought forth and introduced, if there be room, in a warm end of the greenhouse. Those who have bottom heat to spare, and desire very large specimens, may select some of the best plants, disroot and repot them, and plunge them in a bottom heat of 75°. A good compost to grow them in is two parts decayed leaf mould or peat earth, one part rich yellow loam, and one part horse and cow manure in equal quantities, with sufficient silver sand to sharpen it. The Hybrid Perpetual, Bourbon, Tea, and other Roses will now begin to repay by their beauty the trouble bestowed on them. Give weak and clear liquid manure more freely, disbud barren shoots, and fumigate early. Some of the forward Cinerarias and Pelargoniums may be shifted as requisite, as soon as the blooming habit is sufficiently brought on; if done sooner, a superabundance of foliage will be the result.

STOVE.

Some of the plants which have been blooming for many weeks, and which are exhausted, should be cut back and removed to a moderate house to break slowly, such as the Euphorbia jacquiniæflora, Gesnera lateritia, Geissomeria longiflora, Eranthemum pulchellum, Justicia salicina, Poinsettia pulcherrima, and others. These, although not very novel, are very useful, and their early flowering next November and December depends on early cultivation. A bottom heat will be necessary when they are repotted, which will be in about three weeks.

FORCING PIT.

See that all Hyacinths, Roses, Lilacs, Narcissuses, or, in fact, any other forced flowers, are removed from the forcing pit the moment the blossoms begin to expand. Retarding will soon be every-day business.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

AFTER the frost alluded to last week we have had some favourable days for out-door work. Never did we know the soil turn up so freely, and be so dry at this season of the year. If there is no great change as respects moisture, there will be plenty of March dust this year for the comfortable depositing of the seeds.

The general routine was very much the same as in the last and previous weeks. We put in a good breadth of Peas and Beans, trenched the ground, and re-dug and turned that intended for Onions and Carrots. The Celery beds were trenched across, so that the dung left in the beds should be regularly distributed across the quarter. With a little covering in the most severe frost our Celery is still very nice, and turns out well. The late-planted is rather small but sound. We never planted Celery so late as last season. It stood quite thickly in the beds in which it was pricked out, as there we could give a little water and shade. We could not have kept it alive if transferred to wide beds or trenches. We could only manage to preserve our earliest, and therefore strongest, Celery by shading. Notwithstanding all this contest with the drought, we have not had a single bolted or bad stick of Celery this season. We attribute this a good deal to the mode of treatment, and especially to the manner of earthing-up several times referred to. If we have done nothing else, we believe that we have proved conclusively that the bit-by-bit earthing-up of early Celery is the chief cause of its bolting, and thus becoming unfit for table.

Potatoes.—Besides planting under protection, the ground was in a fine state for putting in some of the earliest out of doors, the tubers being just sprung nicely, but not too much. If planted fully 6 inches deep there would be little danger from frost, and there would not be much earthing-up required.

Besides planting stout *Lettuce* plants in the orchard house, we have turned out some thinly between the rows of Potatoes in frames that have been planted out lately, after being just started in pots. We hope the Lettuces will attain a good size before the Potato tops interfere with them. In such early Potatoes, nipping out the terminal bud of the shoot when a foot or so in height prevents elongation, makes the shoots more stubby with laterals, and does not interfere with early tubering. Most of our Lettuces out of doors on the level, though protected, like our fine Cabbages in the open quarters, have given way before the cold, whilst Lettuces on ridges, which measure say a yard at the base, with a yard slope on each side, east and west, have stood well. The Cabbages that have stood best, as already alluded to, are on ridges, and facing the north. There is little new in this—the less vigour there is in a plant the more frost it will stand uninjured. We are often wise behindhand. We have frequently gone over our forward Cabbages at the end of October, and raised them with a spade or fork sufficiently to disturb the roots, and then trodden firmly. The check thus given was a great security against severe frost. We did not do so this season, or very probably we might have saved more of our fine plants. We shall, however, soon turn out a lot forwarded in pots. We shall be obliged to do so as a matter of safety, as they will not be such tempting baits to mice, &c., when they are in the open air. Even though we put a cordon of tar round a frame, we find the mice passed it, and made sad havoc of a lot of bulbs inside. Well would it be for gardeners to cultivate patience as well as increased constant watchfulness.

FRUIT GARDEN.

Here we can add little or nothing to the notices lately given, as from a press of other work out-door pruning, &c., has fallen a little behind, but there is nothing in that respect too late as yet, as there is no appearance of the sap moving. See what was lately said of Peaches, Vines, Strawberries, &c.

We potted off young Melon plants, as at present they occupy small space, and we may find room for them before the plants are large. Potted off also young *Cucumber* plants, and turned strong young plants into 15-inch pots to produce fruit. In our small pit the old plants are still producing a few fruit, and some of them appear likely to go on if we do not work them too hard. If they stand until the younger ones bear we shall be satisfied.

Though this is not, perhaps, the right department to treat on Cucumbers, we may here state that many readers have asked us how we afford our Cucumber plants so little root room. Well, simply because we want a large quantity of Cucumbers in little room, and not strong shoots and parasol-like foliage. These are all right enough, and productive enough, too, if one can give the plants a roof of 12 or more feet to run over; but in a frame or pit of 6 feet or less in width the plants should be curbed rather than encouraged in their luxuriance. Our little pit is scarcely 6 feet wide, inside measure. There is a narrow pathway behind, and the bed or pit for the Cucumbers is not quite 3 feet wide, with two 3-inch pipes in front, and two beneath for bottom heat. Even this narrow bed, for such a limited space, we find quite large enough for root room, and therefore we often plant in pots, as stated above, and surround

the pots with hot tree leaves, keeping the top of the ball several inches from the rim of the pot, earthing-up at times until the pot is full, and earthing the bed over with rich light compost, and allowing the roots to run over it. Last summer and autumn the bed had, perhaps, about half an inch of rich top-dressing added every month or so. We have found no plan better for keeping up a moderate luxuriance and great fertility in little space. Just as the fine large white roots began to appear on the surface, a little fresh rich compost was sprinkled over them, but what was alluded to last week, as to the matter of checks, was carefully attended to. Putting fresh cold soil to a plant in a high temperature is often followed by baneful results. Were the principle involved in sudden and severe checks better understood, there would be less sale for insecticides and other destroyers of insect vermin.

ORNAMENTAL DEPARTMENT.

Here our chief work has been, and will be for some time, ground work and turfing. We shall be anxious to have such work over by the middle of March at furthest, as then we may expect to be little troubled with the turf in summer. There is much trouble in getting extra men, who never took up or laid a piece of turf in their lives before, to do so at all neatly. Much depends on taking up the turf in equal widths, and at equal depths, and then with a line marking the levels it is not so easy to go wrong. Two lads, who had never handled a sod before, turfed a piece very neatly the other day. We hope that in a few weeks general labourers' work will be more plentiful.

Referring to general matters, we will just allude to two things requiring timely attention. For *sowing the seeds of tender and half-hardy plants*, a hothouse or a hotbed will be necessary, and a bottom heat of from 80° to 90° for the first, and from 65° to 75° for the second. All seeds do best in general in rather light sandy soil, enriched with a little leaf mould that has been well sweetened and aired. A little small charcoal will also be an advantage. With large seeds there need be no difficulty, provided they are covered with about their own diameter in depth of soil. Smaller seeds require more attention, and especially such dust-like seeds as those of the Lobelia and Calceolaria. It is best to use as little water to such seeds as possible. We generally, therefore, drain and fill the pots within an inch or so of the rim, using the roughest soil over the drainage, rough but finer over that, and finer at the surface, pressing moderately down with a board; and then the soil in the pots is well watered, and allowed to stand from ten to twenty-four hours, so that the surface may become somewhat dry; on this the seed is scattered, and a little fine silver sand, or silver sand and charcoal dust, sprinkled as thinly as possible over the seed, and gently pressed down. If a square of glass with a piece of paper or cloth is put over the mouth of each pot, there will be next to the certainty of attaining success, keeping the shade on until the seedlings begin to show, and then removing the shade by degrees. The damp in the pots beneath the seed will generally be sufficient to cause germination, without watering, but when watering is necessary it should be given by gently sailing the surface of the soil in the pot all over, and not from the rose of a watering-pot, however fine. Even when seedlings are up this sailing with water, in the case of small seedlings, is of importance. The simplest plan to adopt is to have an oyster shell, or a rounded piece of broken pot, hold it obliquely with the left hand against the inner rim of the pot, and pour the water from the spout of a small watering-pot upon the crock until the water floods the pot without touching the top of the seedlings. Water such tender little seedlings overhead with a fine rose, and if they are at all close together there will be a great risk of their damping or fogging off at the collars. Several have asked how there could be such a difference? and we were obliged to own here our comparative ignorance. It is one thing to note a fact, and quite another thing to be able to tell all the reasons why. It is a fact that diffsrent results will follow from different modes of watering tender seedlings. When glass, as stated above, is not handy, a saucer will answer the same purpose. Many seeds require this protection before they are up as a security from vermin. The advantage of the glass square is that you can regulate light to a nicety.

We meant to have said something about cuttings, but would now merely remark that the chief point is to keep the cutting growing, so as to suffer as little as possible from its severance from the parent plant.—R. F.

TRADE CATALOGUES RECEIVED.

Edmondson Brothers, 10, Dame Street, Dublin.—*Spring Catalogue of Vegetable and Flower Seeds, Garden Implements, &c.*

George White, 3, Moss Street, Paisley.—*Select List of Pansies, Pinks, &c.*

"*Portable Plant Protectors, and How to use them.*"—"*Vines and Ground Vineries.*" By W. Edgcumbe Rendle. London: Simpkin, Marshall, & Co.

W. Clibran & Son, Millbank Nursery, Warrington.—*Descriptive Catalogue of New and Choice Plants.*

S. Shepperson, Prospect House, Belper.—*Catalogue of Pansies, &c.*

B. J. Edwards, 222, Strand, and 25, Bishopsgate Street Within, London.—*Spring Catalogue of Flower and Vegetable Seeds, New Hybrid Gladioli, &c.*

TO CORRESPONDENTS.

*** We request that no one will write privately to any of the correspondents of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By doing so they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely to The Editors of the Journal of Horticulture, &c.*, 171, *Fleet Street, London, E.C.*

N.B.—Many questions must remain unanswered until next week.

Books (*Rosa*).—There is no recent work on Melon culture exclusively. The fullest and best directions are in our Nos. 197, 199, 201, and 283, which you can have from our office if you enclose 1*s.* 2*d.* in postage stamps with your address. (*A Young Gardener*).—"Repton's Landscape Gardening" by Loudon. We do not know the publishers of the other work you name.

White Azaleas (*Julia*).—Louise Von Baden, Louise Margottin, Flag of Truce, and Iveryana.

Mowing Machine (*S. F. D.*).—Any would answer your purpose. You may see specimens at Mr. J. C. Fex's, Horticultural Agent, Arcade, Royal Horticultural Society's Garden, South Kensington.

Barkeria spectabilis Culture (*D. M.*).—Barkerias being plants which make thick fleshy roots, and which enjoy a cool temperature, are easily injured if the roots are confined amongst moss or other wet material. They nevertheless enjoy a copious supply of water during the season of growth, and we have always found them thrive by far the best when fastened upon blocks of wood, with but very little moss; the roots will readily adhere to the wood and remain firmly fixed. They may, however, be grown in pots if preferred, in which case the pots should be quite filled with moderate-sized pieces of charcoal and potsherds, which for appearance may be slightly covered with living sphagnum. If the roots of your plant show the least sign of decay, remove it to a block of wood or piece of cork before it starts into growth, this method being undoubtedly the best to ensure the well-being of all the species belonging to this beautiful genus.

Grass Seeds for a Lawn (*T. H. T.*).—For your lawn of a quarter of an acre which requires renovating, we should sow Trifolium minus only, and 3 lbs. would do it well; this Clover, as you say, stands dry weather well—indeed, with us better than anything else, and gives a close bottom sooner than grass seeds. Do not sow before April, and then during the first moist weather, rolling well after sowing.

Eucalyptus globulus Leaves Warted (*A. Z.*).—The small warts or excrescences on the under side of the foliage are very common on the mature leaves, but we think the leaves have been infested with red spider, which may be destroyed by syringing or sponging them with a solution of 2 ozs. of soft soap to the gallon of water, applied at a temperature of 140°, or if you sponge the leaves, which is better, use it at 120°.

Wiring a Vinery (*Croydonian*).—The best plan is to have the wires crossing the rafters, or lengthwise of the house, and 9 inches apart. You will need an angle iron at each end secured to the end timbers, and a piece of ordinary bar-iron, five-eighths of an inch by a quarter of an inch, at every rafter, or 3 to 4 feet, and these will need to be supported by hangers or holders screwed into the rafters, and secured top and bottom by screws to the uprights or rafters. The angle plates and the smaller iron supports will need to have holes drilled 9 inches apart, through which the wires are to be drawn. Each end of the wires should be prepared to receive a thumb-screw, by means of which the wires can be tightened. No. 10 wire is commonly used, but we employ No. 6. Any of the firms advertising in our columns could supply you. We cannot name one in preference to another. The wires should be fixed 14 to 16 inches from the glass.

Deutzia Treatment (*Idem*).—We can only account for your plant being in such a poor plight from the high temperature in which it is kept, and from its being in a bad state before forcing was commenced. Place it in a house with a temperature of from 45° to 50°, keep it supplied with water, and afford it a light airy position. After flowering, or in April or May, remove it to a cold pit or cool airy house, and in May place it out of doors in an open situation. Keep it duly watered in summer, and before severe weather sets in place it in a sheltered position, the pots plunged in ashes. About Christmas turn the plant out of the pot, remove any old loose soil, and pot again in a pot large enough to hold the roots. Introduce it into a house with a temperature of from 45° to 50°, and the plant will flower in six or eight weeks. This is all we do to our plants, and we have had them in flower from the beginning of January, they being placed in heat at the end of November. Light turfy loam with a little leaf soil and sand grow them well.

Planting Out Calceolarias (*A Constant Subscriber*).—The beginning of April is sufficiently early to transplant them into beds from under the hand-glass, and even then they will require protection at night and in frosty days. If you can afford them protection from frost, you may transplant them any time after this in mild weather.

Short Stems of Hyacinths and Tulips (*Idem*).—The shortness of the spike of the Hyacinth may be owing to the bulb, but the spike may have plenty of flowers and yet be short, from the plants not having had sufficient heat for their full development. The watering and soil would

not cause a short spike, though any deficiency in either respect would cause it to be poor. Tulips potted in September would flower at Christmas, if they had a temperature of from 50° to 55° a month or six weeks previously, and were early-flowering sorts. They would flower now with a temperature averaging 45°.

CASES FOR OUR VOLUMES (*Maida Hill*).—We only supply the cases.

PLANTING-OUT TACSONIA MOLLISSIMA (*Amateur, Dublin*).—The plant turned out last November in a conservatory border ought to be now in a state of growth. It is not usual for it to die down in winter. We have one in a greenhouse, and it is now very vigorous and growing freely, having made shoots several feet long since Christmas, and it is showing bloom at every joint. We only planted it last May, and it flowered and fruited in the past season. We should say your plant is dead.

DISSOLVING BONES (*Idem*).—You will require a weight of sulphuric acid equal to one-half that of the bones. The finer the bones are, the sooner will they dissolve. Dissolved bones are applied to the soil mixed with soil or ashes, and mixed with water as a liquid manure. You will need to dilute with fifty times as much water as the acid employed, calculating by weight, a gallon of water weighing 10 lbs. 8 bushels of dissolved bones, irrespective of the acid, are a good dressing per acre.

LEAVES FOR LEAF MOULD (*Idem*).—The time required for leaves to decay depends on whether they are kept dry and left undisturbed. If laid in a heap and turned over twice or thrice they will be reduced in twelve months. We use our leaves for hotbeds, and by autumn again they are sufficiently decayed for potting purposes. If undisturbed we have known two and three years elapse before the leaves were fit for mixing with soil. We sift ours through an inch-riddle, and when the majority pass that, the leaves are, in our opinion, sufficiently decayed.

CAMELLIAS NOT FLOWERING (*A Subscriber*).—We cannot account for your plants not flowering, as they set buds but fail, only we think the roots are in a bad state. We would, at the end of March, turn them out of the pots, pick away any old soil that you can without injuring the roots, and repot in a compost of the top inch, or not more than 1½ inch, of a pasture where the soil is a good light loam. Chop it up small though not very fine, and pot with this, without admixture, rather firmly, taking care to leave no hollows. Place the plants in a house with a temperature of 50°, watering so as to keep the soil moist, and when they are growing water abundantly. Maintain a moist genial atmosphere, and afford slight shade from the bright midday sun. Keep the plants there until the growth is complete and the buds are set, then remove them to a cool airy house; and if you afford, from November to April, a temperature of 40° to 45° from fire heat, we think you will have a fine bloom. Drain the pots well. Do not place the plants out of doors in summer.

IVY PRUNING (*C. A. S.*).—In pruning Ivy against a wall we cut clean-in, removing every leaf, but we do not think it safe to do this until April, which we consider the best month for cutting Ivy. It makes a much closer growth when cut-in with the shears than when pruned with a knife, some green leaves being left.

LEAVES BLIGHTED (*S. H.*).—The leaves of the plant you describe as a Daisy, but which we do not recognise, are infested with thrips, which may be destroyed by fumigation with tobacco, or immersing the plants in a decoction of tobacco. This is made by pouring a quart of boiling water over 1 oz. of tobacco, afterwards covering it up and letting it stand until cool. Of course, you must not dip the pot and roots. Out of doors the plant will show the effects of thrips, but can hardly suffer from it except in very dry weather.

SHRUBS FOR A MOUND (*Wm. D., jun.*).—The outer margin or foot we should plant with Berberis Aquifolium, and then common Laurel, with a few Portugal Laurels, Lilacs, Laburnums, Syringas, and double Thorns, interspersed at, say, 15 feet apart, and the crown we would have Austrian Pine. These are not expensive. The Berberis may be planted 4 feet, and the others 6 feet apart.

VINES TENDRILLED BUT FRUITLESS (*Old Subscriber*).—We have no doubt that the reason why your vigorous Vines in pots show tendrils instead of bunches, is owing to the Vine wood being imperfectly ripened, very likely from growing in shade, instead of full exposure to light. We consider it would be anything but safe to cut the Vines back now, with any hopes of their making fresh wood and yielding fruit this season. We saw this done once with established Vines that lost their first crop though an accident, but it did no good as respects fruit, and nearly ruined the Vines. There are two modes of treating your strong Vines —If not too far advanced, you might prune them back to a good shoot near the base, and grow that as a single cane in summer to fruit next year; or you may stop your present side shoots—say at 18 inches long, and have them well ripened before the autumn. We are sorry that you have failed after so long a preparation, and especially as you say the wood was well ripened. We have our doubts as to the maturity. Did you pot the Vines in autumn or before forcing? They should have no fresh potting after July or August, so that the pots should be full of roots. The treatment is correct, only we would not let Vines have 70° during the day until the first month were past. In sunless weather 60° by day would be enough, and 50° to 55° at night, beginning with from 45° to 50°. We like the rods to be twisted round, though if care be taken in the breaking, the plants should do very well fastened to a rod 5 feet long.

PROPAGATING VINES (*Idem*) —It matters little how the plants are raised. We prefer using single eyes with an inch or so of wood on each side. Eyes inserted in December and January, and receiving all the time bottom-bed treatment, may be got by repeated shiftings into 12, 15, or 18-inch pots by midsummer, then ripened, exposed in autumn in the shade, and started in November or December to fruit early; but there must be close unremitting attention. Another mode is to put in cuttings or buds in spring, and get the plants established in 6-inch pots in summer, rest in winter, and cut down, grow, repot, and ripen early the second summer, giving two summers' preparation instead of one. This mode takes more time, but less labour and attention.

CLIMBERS FOR A CONSERVATORY (*E. C. K.*).—For growing in pots we have found the following answer:—Brachyæma acuminata, Cobæa scandens variegata, Dolichos lignosus, Habrothamnus elegans, Hibbertia volubilis, Jasminum grandiflorum, Kennedya variegata, K. inophylla floribunda, K. Marryattæ; Lapageria rosea, Passiflora Comte Nesselrode, P. Impératrice Eugénie; Rhynchospermum jasminoides, and Sollya linearis. The size of pots depends on the plants; they need shifting from one size to the other until they are in their full size, which, for the first season need not exceed 9 inches in diameter, and the next 11 inches; and a 13-inch pot we consider quite large enough for the third and subsequent seasons, the ball being reduced at the annual spring potting.

GLAZING GREENHOUSE ROOF (*J. Smith*).—A rough plate or fluted glass roof will do admirably for a greenhouse, and requires no shading in summer, and gives plenty of light in winter; but we prefer the front lights to be of clear sheet glass, so as to see through them.

ASPECT FOR GLASS STRUCTURES (*W. H. F.*).—The 10 yards freely exposed to east, west, and north, are excellent for glass houses, either for fruit or flowers. For the other 10 yards, more or less blocked-in to a height of 25 feet, we would advise covering with a glass roof, and devoting that space to Ferns and fine-foliaged plants. The plants indicated would do well, but if you prefer fruit and flowering plants, we do not think you would succeed in the shaded part. Plants would keep longer in bloom there, but would not grow and come into bloom so well.

DISBUDDING VINES (*M.*).—We are a little in doubt whether you refer to Vines in pots, or to Vines growing in the usual way; but in either case when you secure as many fruit-bearing shoots as you wish, and a few others, as may be wanted for future wood, it is well to rub off the extra shoots. On the rod system, leave another for rods; on the spur system, leave enough, though not fruitful, for future spurs where wanted. Fruitful Vines require a great deal of rubbing off.

FLOWER GARDEN PLAN (*An Earnest Reader*).—For the scroll beds we prefer Christine Pelargonium for the centres, and the other beds as proposed, dotted with Bijou. Both of the proposed modes would look well, but we think Bijou and Iresine Lindeni would contrast better. We also like very much the proposed arrangement for the border, only we would hint that you may have the Perilla of any height, but cannot so well top the Ageratum; and as the Berberis, &c., behind will do little more than make a background, we should be inclined to place the Perilla behind the Calceolaria, and the Ageratum behind Stella Pelargonium.

CUCUMBER-HOUSE FAILURES (*An Old Subscriber, Richmond*).—A bed 3½ feet wide, with a depth of 18 inches, is quite room enough for the roots of Cucumbers that you grow in the front of your house. It is quite possible to have too much bottom heat, but it is just as possible that the evils you complain of are the consequence of the heat being too dry, and hence the baked appearance of the soil next to the slate, &c. Now, supposing you had a chamber covered with slate, and covered the slate with 2 or 3 inches of rough rubble, and had upright drain-pipes standing in that rubble before you put in the soil, by pouring water down the drain-pipes, and having a stick in several, with a ball of moss fixed at the end, you could always judge of the dryness or moisture of the rubble. We have nothing to say against chambers, but the roots should never come in contact with the dry covering. Where pipes are used for bottom heat, there is no simpler and better mode than that frequently recommended by Mr. Fish—namely, to surround the pipes with open rubble, cover slightly with the same, and then make the bottom of the bed with clean gravel, and by upright pipes, as above, have the means of damping the rubble and gravel, and yet not do so too much.

PRUNING YEW TREES (*An Old Subscriber*).—The beginning of April is the best time to do this, and you may prune to any extent without fear of the tree not putting out shoots from the thick bare stems. The fresh shoots made this year we would not cut, but in the April of the following year we would cut off any irregularities of growth, and in subsequent years clip in May, and the tree will grow sufficiently to give a nice feathery appearance—very much grander than that close stiff formality resulting from cutting in August when the growth is complete. It is well, however, to go over the tree in August, and with a knife remove any irregular growths.

SOILS (*A Subscriber*).—1, "Strong turfy loam" is the top 2 or 3 inches of pasture where the soil, from the absence of sand or gravel, is close, and overlies a clay subsoil. 2, "Hazel loam" is a medium-textured loam, not light-sandy nor yet heavy-clayey, and of a hazel colour—brown streaks through yellow. 3, "Sound deep light loam," we presume, is a soil not very light, yet more sandy than a clayey loam, but more retentive of moisture than sandy soil, and of some depth. 4, Alluvial soil is that of freshwater deposits, forming in the course of ages the rich soil of valleys. 5, Peat is vegetable matter reduced to soil, and is found on moors, and is covered with Heath or Ling. That on high ground is peat, as used by gardeners, and is full of fine particles of white sand.

VARIEGATED BEDDING PELARGONIUMS (*Maria Henderson*).—We presume you mean Gold and Silver Tricolors only. Then, as you exclude new kinds, of the former Mrs. Pollock, Sophia Cusack, Lucy Grieve, Sophia Dumaresque; of the latter, Mabel Morris, Italia Unita, Prince Silverwings, and Glen Eyre Beauty.

TURNIP SOWING (*A Beginner*).—Your proposed plan ought to produce a good crop, if the Turnip fly allow you to have a good plant.

MUSHROOM BED (*A. D.*).—As the beds are to be on the floor, we would have a walk of 2 feet or 30 inches down the centre, and beds 9 feet long and rather more than 4 feet in width. Our shallowest beds we would have about 12 inches deep in front, and from 15 to 18 inches deep at back. For winter work we would have them a little deeper, and depend on surface-covering to keep up the necessary heat. Now, there are many ways of making such beds. Collect the horse droppings with nearly an equal portion of short litter for a week or ten days, and lay them in any place, not too thickly, where no rain will fall on them. Then add a barrowload or two of dry soil, mix all together, and make this the base of the 9-feet bed. Beat it firmly together, and it will heat very moderately. Then every second day add the droppings, and the same amount of short, dryish litter all over, tread or beat, and then put a little dry soil over. Continue the process until the necessary height is secured, as referred to above, for the different seasons. By this plan as will be perceived, the bed will never become very hot, and the bulk of the manure will be fresh—full of nitrogenous matter—and, therefore, capable of carrying a heavy crop of Mushrooms.

HEADING MAIDEN PEACH TREES (*Probo*).—The trees should be headed down early in March to within five eyes from their base; or, if the buds are wide apart, cut back to an eye not more than 6 inches from the junction of the shoot with the stock. You will secure five shoots—two for each side, and one for a leader. Erébaut's "Modern Peach-Pruner" is the best work of the kind. It may be had by post from our office if you enclose 3*s.* 8*d.* in postage stamps with your address.

PLANTING GLADIOLUS SPAWN (*Amateur*).—Plant about the middle of March if the ground is in good working order, having had it previously well turned up to a depth of not less than 15 inches. If the soil is clay, or otherwise unsuitable, it should be removed to the depth of 18 inches, and if the subsoil is wet, take out a further depth of a foot; then fill up with any kind of rough material, as stones, brickbats, &c., and cover the drainage with stable litter, throwing in good soil enriched with leaf soil and well-decomposed manure. If the soil is wholly bad, prepare an artificial compost of two parts turfy loam—all the better if the soil inclines to a sandy peat—one part sandy peat, and one part well-rotted manure. Chop the turf up pretty fine, mixing all well together, put in 18 inches deep of this compost, and cover the bed with 6 inches of soil. The bed should be raised 9 inches above the surrounding level. Prepare them at once, and in a fortnight it will be advisable to plant. Divide the offsets into two sizes, the large and small; plant the former in rows 6 inches apart, and 4 inches apart in the rows. Draw the drills 3 inches deep, and cover the bottom with sand, put in the offsets firmly, covering each with sand, and draw the soil over them. The smaller offsets may be planted in the same way, but much more closely together. Water freely in dry weather, and overhead in the evenings of hot days.

BEDDING CALCEOLARIAS (*Idem*).—It is not advisable to place those that have been wintered in a cold frame in a hotbed at this or any season. If they are too close together thin out every alternate plant and row, and replant in a cold frame.

CLIMBERS FOR A PORCH (*J. S. S.*).—No plants will produce such a good show of flowers on an east aspect as Roses, and we advise Russelliana (Multiflora) and Dundee Rambler (Ayrshire). These will be sufficient, one being planted on each side.

EDGING FOR KITCHEN GARDEN WALKS (*R. S.*).—We do not think the Saxifrage would suit, nor yet Thrift. London Pride (Saxifraga umbrosa) would no doubt answer, but we should prefer next to Box the Bush Alpine Strawberry. Ivy does well, but is very troublesome to keep in order; the most suitable for edgings is Hedera Helix poetica, or common Wood Ivy. H. taurica is also good. The Fern so full of ripe spore-cases is Lastrea glabella, and the pale green spare-looking kind is Asplenium flaccidum.

CLOUDING GLASS (*T. U. U.*)—You may "muffle" the glass of your fernery by dotting the inside with thick whitening well sized. Apply it by the end of a large painter's brush.

PLANTING POTATOES (*C. C.*)—Such large varieties should be planted 9 inches below the surface. Use decayed dung; if you put it into the trench let it be below the sets. See what is said to-day about the Bovinia.

PLANTING PATERSON'S BOVINIA POTATO (*C. P.*).—If your ground is very good loamy soil allow quite 42 inches between the rows, and 18 inches set from set. But if you decide upon alternately planting with a first-early sort, to dig out of the way of the Bovinias before the latter "become very large in the top," then 30 inches would not be too much to allow between the rows. Hogg's Early Coldsteam (round) and Myatt's Early Prolific Kidney are to be preferred for quite early use, and I have often thus planted alternately late coarse-foliaged and first early kinds on my ridge-and-trench system, sowing a pinch of early white Turnips daily on the site from whence I dug the young Potatoes, with very good results. If the late Mr. Paterson had taken me as a "friend in council," I should have advised him at this time of day not to have introduced his Bovinia to the public. By so doing he retrograded to Ox Noble, Farmer's Glory, Mangold Wurzel Potato, and the Stoker and Nigger set, the like of which, as some of my own recent seedlings, I have just relegated to the copper in order to make quite sure that they will not be handed down to posterity; because in 1841 I was taught a valuable lesson by the pigs, by giving them Farmer's Glory and Birmingham Blues for breakfast. They fought over the trough containing the "Brummagems," and turned up their noses at the former till not one of the latter remained. That proved a death blow to the Glory and all its class in my opinion. If you boil some Paterson's Bovinia and Victorias, and fill two troughs of each respectively for the pigs to choose from, they would for preference consume the Victoria first; and as the Victoria is a much larger yielder than the old Birmingham Blue, and withal nearly as good in quality, let me advise you to cultivate it in preference to the Bovinia, on the understanding that the Victoria would not yield so large a bulk as the latter, although having a greater amount of fattening properties.—ROBERT FENN.

NAME OF FRUIT (*C. C.*).—Early Nonpareil.

NAMES OF PLANTS (*Grogee Bysails*).—1, Pteris asperlcaulis, var. tricolor; 2, Adiantum formosum; 3, Cheilanthes myriophylla; 4, Polystichum angulatum. (*T. B. W.*).—1, Cheilanthes Sieberi; 2, Doodia caudata; 3, Polystichum aculeatum; 4, Asplenium lucidum; 5, A. flaccidum. (*Penzance*).—3, Grevillea rosmarinifolia. The two others were not in bloom, and were not identified by us from the leaves.

POULTRY, BEE, AND PIGEON CHRONICLE.

OUTRAGES ON PRIZE POULTRY—HOW SHOULD FOWLS BE HANDLED?

THE accounts given by Mr. Cresswell and Mr. Will as to how their poultry have suffered ought to secure the attention of all interested in poultry matters, with the view of endeavouring to find out the perpetrators of the outrages, if such there be. I can hardly fancy that a person fond of poultry, or who has any taste for the fancy, could be so base as to disfigure a bird on his chance of winning. Now, I must candidly say that I believe the blame lies with the committees of poultry shows in not selecting proper persons to unpack and pen the birds. I am now becoming an old exhibitor, and, of course, have been at many shows, and I frequently found the committees had engaged to unpack poultry a man or men who had no idea how to handle a bird—no, not more than a tom cat.

Not many months ago I saw the clearance of a poultry show after the show was closed, and I noted how the birds were taken out of the pens. As soon as the packing began, the cry and cackle were general all through the show. All the birds seemed alarmed. Four men seemed to have undertaken the job with the assistance of several exhibitors. The hampers were drawn out from under the pens all in hurry-scurry. "Now, Jack, look sharp!" and Jack did look sharp, for no sooner was the pen open than Jack made a grasp at a Game cock—tail and leg together—of course, feathers had to come with the bird, but not all of them, for there was a handful left in the pen. The Hamburghs fared no better from their disposition to fly about; but one old Duck seemed not to be taken out in such an unprofessional manner. She was taken by the leg, but she would persist in spreading out her wings; so that was no way to bring her out. The next grab was to take hold of the wing, and by that means she was dragged out, and tumbled into the hamper. This is no common occurrence.

I consider that no subject connected with poultry requires more attention and discussion than the way in which different kinds of poultry should be handled—that is, some of our judges or exhibitors might state in the Journal how to take birds out of a hamper and place them in the pens, for there seems to be some art in managing this properly. Just observe how quietly our judges handle a Game cock. How do they take him out of a pen, and without disturbing a feather?

A few hints from exhibitors will not be out of place, and I fancy the managers of poultry shows would like information.

In conclusion, I just put the question, Which is the best way to take out of a pen the Goose, Turkey, and Duck, &c.? Should the legs, wings, or head be the place to take hold of?—R. D.

JUDGES CLAIMING BIRDS AT POULTRY SHOWS.

PERMIT me, through your Journal, to call the attention of poultry exhibitors to the unfairness of permitting the Judges to claim birds before the shows are opened to the public.

Hearing there would be a good collection of birds at Wolverhampton Exhibition on the 3rd inst., I went there to see if there were any pens I should like; and knowing, from previous experience, the necessity of intending purchasers getting in as early as possible, I was on the spot before the doors were opened, and was the second person in the hall. My attention was taken by a pair of Dark Brahma hens, and I hastened to the Secretary's office to purchase them. It was not then open, but I waited till he came, and was told the birds were sold, much to my astonishment, as I had been the first to claim them legitimately. Asking the purchaser's name, that I might treat with him, I was informed he was one of the Judges, and that he had claimed them before the opening of the show. I think this is anything but fair to the public, and trust you will insert this letter, that poultry fanciers may endeavour to prevent the repetition of such an injustice.—JAMES WATTS, *Hazlewell Hall.*

EXHIBITING CARRIER PIGEONS.

I QUITE concur in the remarks of Colonel Hassard in page 112, that the exhibiting of Carriers in pairs is disadvantageous alike to the promoters of shows and to exhibitors. At any period of the year save the winter months few breeders would be induced, even for the honour of prize-winning, to break their pairs as mated together, which in all probability would be done so that they would be no match in colour or other properties for successful competition.

I have been requested to show at the forthcoming Colchester Exhibition where the birds are to be shown in pairs, but having commenced pairing for this year's breeding I am compelled to decline doing so. Had the birds been shown singly I should have entered, as, out of a lot, some one or two might have been sent that at the time had not commenced to breed, but to part pairs and remate for showing is quite out of the question.

Carrier classes are generally well filled, and frequently self-supporting from the amount received in entry fees, and at all shows that rank of any importance there should be four classes—viz., Black cocks and hens separately, and the same with Duns or any colour; and why not represent the Blues, which I fear from lack of encouragement have not progressed of late years as the others?

May I take this opportunity of informing Carrier fanciers that our schedule of the Spalding Show for next June's competition

comprises five classes in single birds, instead of two only as heretofore? Though the Committee are aware the height of summer is not a time to expect the fullest entry, they anticipate no loss by the increase of the classes. I hope Colonel Hassard will put in an appearance here.—WILLIAM MASSEY, *Spalding*.

TORQUAY POULTRY SHOW.

IT must be a source of gratification to a remarkably attentive Committee to have found so excellent a collection of birds as that brought together at this Show, held from the 15th to the 17th inst., as well as an attendance of visitors that has rarely been equalled at any poultry show in the west of England. Mr. Beachey, of Finder House, Kingskerswell, has proved himself an able secretary, and the present high position of the Torquay Show is attributable in no small degree to his indefatigable efforts. Messrs. Turners' exhibition pens were a decided improvement on the arrangements of last year, and the expression of satisfaction among the visitors was general.

The display of Grey *Dorkings* was excellent, and it is very rarely these classes are throughout so well filled. The White Dorkings were also remarkably good. Of the *Cochins* the White were certainly the best shown, the majority of the Buffs being evidently suffering from over-exhibition. At the show of last year the Dark *Brahmas* were the first feature of the exhibition, but this year the entry was not of nearly equal quality. A very large number of Light Brahmas were entered, a few of which were very superior, but the bulk were quite overshown. Mr. Paree, of Guildford, won the silver cup with his well-known pen. *Spanish* were good throughout, but the rigour of the last few months had told most severely on the combs of many of these birds. Never was there a better display of *French* Fowls seen at any previous English show, and the really faultless condition, and excellent health in which they were shown, proved they were perfectly acclimatised. *Ducks* were all good classes, the Variety class especially so. The prizes were awarded as follows:—Viduat Whistlers first prize, Buenos Ayrean second, a grand pen of Carolinas third, and Mandarins fourth prize. The Selling classes were very large, and as most of these entries were worth far more than the restricted price, as stated in the catalogue, a very large sale was effected.

The *Pigeons* were not so numerous as was anticipated, but this could be easily accounted for by the fact of several shows being held simultaneously. So good, however, were some classes, that every pen was favourably noticed by the Judge. The rivalry to secure the silver cup offered to the best exhibitor of Pigeons was very keen, and excited much public interest, the two principal aspirants being Mr. Taylor and Mr. Yardley, the latter, though successful, being so very closely run as to win only by a single point.

DORKINGS.—*Coloured, except Silver-Grey.*—1, 3, and Cup for best pen of poultry shown by residents in Devon, Somerset, or Cornwall, L. Patton (Grey). 2, J. Martin. 4, Mrs. Wollocombe. *hc*, G. Whitcombe; H. Pickles, jun. *c*, R. W. Beachey. *Silver-Grey and White.*—1, Mrs. E. Williams (White). 2, R. H. J. Gurney. 3, W. E. George.

COCHINS.—*Cinnamon and Buff.*—1, Miss J. Milward. 2, W. F. Checkley. 3, S. R. Harris. 4, J. Watts. *c*, Mrs. Wollocombe; W. Masland. *Any other Variety.*—1, J. Sichel. 2, S. A. Wyllie. 3, C. F. Wilson (Partridge). 4, F. Wilton (Black). *hc*, W. E. George (White); J. H. Dawes. *c*, J. K. Fowler.

BRAHMAS.—*Dark.*—1, J. H. Dawes. 2, J. Dove. 3, Rev. J. Bowen. 4, J. Sichel. *Light.*—1 and Cup for best pen of Light Brahmas, J. Pares. 2 and 3, A. O. Worthington. 4, T. A. Dean. 5, J. R. Rodbard. *hc*, C. W. Croft. *c*, F. Crook.

SPANISH.—1, H. Beldon. 2,—Allsopp. 3, H. Lane. 4, J. Watts. *c*, E. Jones; Howard & Nichols.

FRENCH FOWLS (Houdans, La Flèche, and Crêve-Cœur).—1, J. Sichel. 2, F. Brewer. 3, W. Burrows. 4, H. Beldon. *hc*, C. H. Smith; Rev. N. J. Ridley; W. Dring. *c*, Major Irving (3); Rev N. J. Ridley.

HAMBURGHS.—*Gold and Silver-spangled.*—1, H. Beldon. 2, H. Pickles, jun. 3, Ashton & Booth. 4, Lady Vivian. *hc*, H. Pickles, jun.; Miss E. Browne; J. Ogden; N. Barter. *c*, H. Beldon; H. Pickles, jun. *Gold and Silver-pencilled.*—1 and *hc*, H. Pickles, jun. 2, N. Barter. 3, H. Beldon. 4, Rev. A. T. Willett. POLISH (Any variety).—1, D. Mutton. 2 and 3, H. Beldon. 4, T. Dean. *hc*, W. Boyes; H. Pickles, jun.; M. Nicholls; D. Mutton; W. Gamon. *c*, A. Cruttenden; W. Boyes.

GAME.—*Black and other Reds.*—1, 4, and *hc*, W. Boyes. 2, S. R. Higham. 3, S. Matthew. *c*, W. H. Stagg; J. T. Browne; R. Stork; E. Bell. *Any other Variety.*—1 and *hc*, S. Matthew (Duckwing). 2, J. T. Browne (Duckwing). 3 and 4, W. Boyes (Duckwing).

BANTAMS.—*Game.*—1, E. Cambridge. 2, R. Swift. 3 and 4, Withheld. *Any other Variety.*—1, E. Cambridge (Black). 2, H. Beldon. 3, S. & R. Ashton. 4, M. Leno (Laced). *hc*, R. Coath (Black); H. Yardley. *c*, W. Boyes (2).

DUCKS.—*Rouen.*—1 and 4, L. Patton. 2, J. K. Fowler. 3, S. R. Higham. *c*, Mrs. M. Seamone. *Aylesbury.*—1 and 3, Mrs. M. Seamons. 2, J. K. Fowler. 4, T. F. Hawken. *Any other Variety.*—1 and 4, M. Leno (Viduata Whistling and Mandarin Ducks). 2, W. E. George. 3, Rev. W. Sergeantson. *hc*, W. Boyes (Black East Indian) (4); G. S. Sainsbury (Black East Indian); J. K. Fowler. *c*, Mrs. M. A. Hayne (Black East Indian).

ANY OTHER VARIETY.—Rev. W. Sergeantson. 2, W. Wildey (Andalusian). 3, W. Boyes (Sultans). 4, H. Beldon. *hc*, Hon. J. Masse (Malay); Mrs Llewellyn (Sultans); W. Wildey (Andalusian). *c*, J. Hinton (Malay); Rev. N. J. Ridley (Leghorn).

SELLING CLASS.—*Cocks.*—1, H. Lloyd, jun. (Cochin). 2, Miss E. Browne (Spanish). 3, R. W. Beachey (Brahma). 4, J. H. Nicholls (Cochin). *hc*, H. Beldon; H. Pickles, jun. (Poland); A. C. Travers (Game); R. Pile (Brahma); H. Yardley; J. Dove (Cochin); R. Wright (Spanish). *c*, W. Yelland (Crève-Cœur); J. N. Whitehead (Cochin); J. Long; F. Brewer (Houdan); Howard and Nichols. *Hens.*—1, J. H. Nicholls (Cochins). 2, Howard & Nichols. 3, Miss F. Brown (Spanish). 4, J. N. Whitehead (Cochin). *hc*, J. Easterbrook (Black Minorca); Mrs. M. Seamons (Dorking); H. Pickles, jun. (Polands); H. Lane (Spanish). *c*, H. Beldon; R. Stork (Game); S. A. Wyllie (Polands); R. Pile (Brahmas); R. W. Beachey (Brahmas and Dorking) (3); F. Brewer (Dorking).

Cup for the most successful exhibitor in the poultry classes.—Mr. Beldon.

PIGEONS.

CARRIERS.—1, H. Yardley. 2, E. Horner. *hc*, G. J. Taylor (2). *c*, E. Horner; H. Yardley.

POUTERS.—1, G. J. Taylor. 2, E. Horner. *hc*, E. T. Dew. *c*, E. Horner.

TUMBLERS.—1, G. J. Taylor. 2, E. T. Dew. *hc*, G. J. Taylor; E. Horner. *c*, C. Bulpin.

BARBS.—1, G. J. Taylor. 2, H. Yardley. *hc*, E. Horner.

JACOBINS.—1, G. J. Taylor. 2 and *c*, E. Horner. *hc*, J. & C. Bullen; C. Bulpin.

FANTAILS.—1, H. Yardley. 2, W. H. Tomlinson. *hc*, J. F. Loveridge. *c*, E. Horner; W. H. Tomlinson.

TRUMPETERS.—1, E. Horner. 2, P. H. Jones. *hc*, W. Masland. *c*, W. Mudge C. Bulpin.

OWLS.—1 and 2, P. H. Jones. *hc*, J. Ford.

NUNS.—1, H. Yardley. 2, T. A. Dean. *hc*, T. A. Dean; F. Graham.

DRAGOONS.—1 and 2, G. South.

ANTWERPS.—1 and 2, H. R. Wright. *hc*, W. H. Mitchell; H. Yardley.

TURBITS.—1, H. Yardley. 2, P. H. Jones. *hc*, G. J. Taylor; G. H. Gregory; E. Horner.

ANY OTHER VARIETY.—1, C. Bulpin (Archangels). 2, J. Bowes. *hc*, C. Bulpin (Helmets); J. Watts; E. Horner.

Cup for the most successful exhibitor in the Pigeon classes.—Mr. Yardley.

The Judges of poultry were the Rev. G. F. Hodson, and Mr. Edward Hewitt; Mr. Esquilant officiating for Pigeons.

FARM BREEDING AND MANAGEMENT OF POULTRY.

AT a meeting of the Midland Farmers' Club, held February 8th, the following remarks were made on this subject:—

The Rev. A. G. BROOKE (of Shrawardine, Salop) said:—Mr Chairman and Gentlemen, the subject for our consideration to-day, "The Breeding and Management of Poultry," is, you will admit, one of great importance, and the few remarks which I am about to make will, I trust, lead to an interesting and profitable discussion. First, then, as regards "the breeding of poultry." When we find from statistics that an immense quantity of poultry of all descriptions is annually imported into this country from France and Germany; that hundreds of millions of eggs are imported yearly, and that in spite of that terrible war which has been so long raging, 22,000,000 of eggs arrived from France during November in last year, it must surely be admitted that for some time past we have too much neglected our farmyard poultry, which forms in these days such an important market commodity as food for the people. Take the generality of poultry in farmyards, and what do you find? A quantity of fowls of all sorts and sizes, mostly the result of breeding in-and-in for years past, the owner continually grumbling because they cost so much to keep, the feeding being generally left to a personage known as the boy, who feeds the fowls and hunts up the eggs, and most liberally throws down handful after handful of grain with more zeal than discretion, and then, in the winter months, when eggs are scarce and might be a great source of profit, few, if any, are to be found. It is all very well, you may say, to point out defects, but where is the remedy? Simply in this, that the majority of farmers need, with their poultry, reform. To make poultry profitable, you must first of all start with the breed that will ensure you success.

Having been a most successful exhibitor and breeder for nearly twenty years, and having kept almost every variety of the feathered tribe and tested their merits, permit me to recommend to you the following suggestions:—Either send to market and so dispose of every fowl in your yards (and you will never have a better time of year for getting rid of them than the present), and then commence with an entirely fresh strain; or else keep about a dozen of the best and biggest of your pullets, and purchase another bold chanticleer to proclaim the morn, and thus introduce fresh blood amongst them. As regards starting with an entirely fresh strain (the doing which I most strongly recommend), you will find that it will answer your purpose best to keep Dark Brahmas—say a two-year-old cock and six pullets, by way of a start, and for this reason. They are very hardy, extremely prolific, and good mothers; if hatched in April, they will lay during the winter months, and, with a liberal supply of good food, the chickens attain size and flesh very fast; can soon be got ready for the market, and are by no means coarse for the table. In addition to this, they are handsome, and an ornament to the farmyard; the eye is naturally pleased by seeing a true and pure strain of fowls foraging about, and in these days of poultry exhibitions, good birds (especially of this breed) command high prices, and you will find them very remunerative. As an instance of this, I commenced keeping Brahmas some four years ago (having heard them so highly spoken of), and purchased some prize birds. The first time I exhibited this breed was at Middleton, near Manchester, and with a cockerel seven months old I won the first prize, and the bird was claimed at the catalogue price, £5. Since then I have occasionally bought eggs, in the spring, from exhibitors on whom I could depend, and have been most fortunate in hatching early birds. Most of them I sold at the rate of 50*s.* the cockerel and two pullets; others were used for household purposes. The pullets I saved each year for winter laying were invaluable. You may perhaps ask, Where can Dark Brahmas be obtained? As a rule, I prefer purchasing birds rather than eggs for hatching, and now that poultry shows are so numerous, Brahmas are always to be met with at fair prices. For instance, an opportunity will be afforded you at Wolverhampton Poultry Show, to-morrow; or, failing that, there is an excellent newspaper called THE JOURNAL OF HORTICULTURE AND COTTAGE GARDENER, published every Thursday, which treats most efficiently on all matters connected with poultry, and from which you can derive most useful information. In the advertisements you will find fowls of all varieties, and eggs, for disposal, from well-known breeders, and in time you would also find it a very useful medium for getting rid of some of your surplus stock. In thus strongly recommending Brahmas as best suited for farmyards, I do not wish to speak disparagingly of the many other useful varieties of fowls which we have, such as Dorkings, Cochins, Spanish, Game, and Hamburghs; by all means, try them if you like.

But were I a farmer, and wanted a really useful and remunerative breed, for hardiness, fast growing, and sure and certain winter-layers, I would keep Brahmas—Brahmas, and nothing but Brahmas. Another suggestion which I offered was that of keeping some of the best and biggest pullets, and turning down with them a fresh cock. Here I would recommend either Dorkings or Brahmas as being most suited. A friend of mine had a Brahma cock from me two years since for this purpose, and the number of chickens when I last saw his yard might have been described as "legion."

If we look into our markets, I do not think that we find the dead poultry offered there for sale much larger than it used to be, with the exception of Turkeys, Geese, and Ducks, in which I have noticed vast improvement. And here, again, the result of having only first-rate strains to breed from soon shows itself. A good strain will cost no more to keep than a bad one. To show how much Ducks have, of late years, improved in weight, at the last Birmingham Show the first prize Aylesbury Ducks weighed over 18 lbs. the couple. Seventy-two pens of Rouen Ducks competed there, and the first prize couple weighed 19 lbs. 4 ozs. Geese weighed 58 lbs. and 56 lbs. the couple, and goslings of last year 49 lbs. The first prize adult Turkey cock, which came across the Atlantic to compete, weighed 36 lbs. 4 ozs. This bird I believe to be now the property of Mr. Lythall, and with it, if I mistake not, he won the silver cup at Bristol during last month. Both the prizes for Turkey cocks of 1870 went also, at Birmingham, to the same gentleman, with birds weighing 24 lbs. and 23 lbs. each. The old prize hens weighed 35 lbs. and 34 lbs.; the young ones, 31 lbs. and 29 lbs. If you breed from such strains as these, you may go and do likewise. If you make a point, too, of attending some of our largest exhibitions, and mark well the points and characteristics of the winning birds in these breeds you may be desirous of keeping, experience will soon teach you the standard requisite to be attained. Whatever be your breeds of poultry, be careful to infuse fresh blood into them every spring.

As regards the management of poultry, the most important point is to have a properly-constructed, well-ventilated poultry house, with plenty of light, and free from draught. By all means have this before entering upon a fresh breed of fowls, as on their arrival they can be shut in for a few days in their new abode, and thus learn to return to it for the purpose of laying and roosting. Have the door well secured by two flat iron bars to go across it, fastened with staples screwed into the post at one end, and by patent padlocks at the other. There should also be a sliding panel in the bottom of the door for the fowls to go in and out during the day, and the lower iron bar should go across this panel when shut down for the night. You will thus be better able to frustrate the designs of that class of people who hardly know the difference between "mine and thine;" and sly Reynard (however desirous we may be of his welfare) will find it answer his purpose better to visit the poultry yard of some more careless neighbour. The walls of the house should be limewashed at least three times in the year. The perches should not be more than 3 feet from the ground, and ought to be at least 3 inches wide: a larch pole, split in halves, answers the purpose admirably. These perches should be placed all round the house, about 3 feet distant from the wall, not one above the other, and care should be taken that there are no beams or rafters that they can fly up to in the roof, as in their descent they alight on the ground with great force, and this is the cause of so many cocks being bumble-footed and gouty. Round the walls, on the ground, at convenient distances, place three bricks, to form a square for nests for laying and sitting; in these place some hay and a china egg. I prefer this plan to boxes, because they are easier to keep clean, and the other fowls cannot roost upon them to disturb the sitting hens. The centre of the house being an open space, there is room to have the droppings properly raked out from under the perches once or twice a-week, and fresh earth or coarse sand thrown all over the floor, and well raked over. The value of these droppings as manure cannot be too highly estimated. It is usually the plan to allow fowls to roost in sheds, bushes, or trees, where the droppings are mostly wasted, and cannot well be collected and turned to good account. In some places where there is a poultry house the fowls undoubtedly decline roosting in it, because it is kept so dirty, and consequently swarms with vermin. The cleaner you keep your fowl-house the healthier will be your stock. If you can induce your Turkeys to roost in the same house as your fowls, so much the better; and, although it may entail, at first, a little extra expense, by all means have a separate dwelling for your Geese and Ducks. Let the floor be well littered with straw, to be occasionally shaken over, or changed. In winter time, eight o'clock is almost early enough for fowls to be let out of their house, but before so doing it is a good plan to give them a liberal supply of soft food (warm if possible), as it will teach them to become attached to their abode, and the sitting hens will reap the benefit of a regular meal. By soft food I mean potatoes boiled the night before, and mashed up when warm with Indian or barley meal. Corn should be given in the middle of the day, and again before going to roost, in the vicinity of the fowl house. Cabbages should also be specially grown, to be given them daily during the winter months. In summer time they can of course in a measure cater for themselves. The sitting hens will also be much benefited by having a cast iron trough (which will cost about 3s.) placed on two iron brackets, fixed in the wall of the house about a foot from the ground, to contain water, which ought to be changed every morning. As regards the rearing of chickens, I would only say, when under the coop give a most liberal supply, little and often, of different kinds of food, but above all be very particular that the water given them to drink is clear, and often changed. Information you may sometimes require about the management of your fowls and their various ailments, and if you will write to the editors of the paper I have before mentioned, they will, I am sure, willingly give you advice in the columns allotted for correspondence.

In drawing my remarks to a close—though I now assure you that poultry may be made a profitable adjunct to the stock of the agriculturist, and a source of great pleasure and amusement to the amateur, and that with proper care, judgment, and attention it will be exceedingly remunerative—yet I trust that we may, in the course of time, be allowed another discussion on the subject, and learn much by listening to the experience of some members of this club, who may take heed of my suggestions, which, out of pure love for things appertaining unto poultry, have been humbly offered.

Mr. Lowe said that Mr. Brooke had told them that his experience showed that the Dark Brahma were the best kind of poultry for the farmer, but he feared that the price which it was stated three of these birds had fetched—50s., showed that Mr. Brooke must have been looking at the matter from an amateur's point of view. The neglect of poultry by farmers, he considered was due to one of two causes. Either the farms were now on a much larger scale than formerly, or the wives and daughters of farmers did not attend properly to the poultry. Now his later experience was not sufficient to enable him to say whether the Brahma breed would be the best for the farmer to cultivate; but he was thrown back on the experience of the past, when they used to think a Black-breasted Red a decent bird [laughter]. He could remember when those birds would give them a little amusement in the shape of a stand-up fight [laughter]; but in these enlightened days far more healthy pastimes had been introduced. Nevertheless these birds had qualities besides their fighting propensities, and a couple of Game chickens were by no means a bad dish to introduce [hear, hear]. He begged to suggest whether the excellent wives of the farmers and their daughters could not devote more attention to the cultivation of poultry, more especially in the shape of food for the people.

Mr. George Wise said a few years ago, when he lived in Ireland, he was a very great fowl-keeper. He was very unfortunate now with regard to fowls, but he still took a very great interest in them. He took a great interest in the preservation of fowls, looking at it as a fox-hunter. He never lost but two fowls during the whole time he had kept them, and if people would only just take care of their fowls they would not be pestered by people saying, "The foxes are always taking our fowls" [laughter]. It might be interesting to some gentlemen to know that during the five years he kept fowls he always found that he got more eggs in the month of February than in any other month [hear, hear], and the next month he found good for his eggs was the month of July. He always gave his fowls plenty to eat, and fed them regularly, and took as good care of them as he did of himself, and he could only say he found them most profitable [hear, hear].

Mr. Brooke said he must disagree with Mr. Lowe on the point of keeping Brahmas. He had kept Malays for the last thirty years, but he would not recommend them to farmers.

Mr. Lort said he should recommend Malays to farmers. He had kept them, and had found they were the only breed he could keep. They were an excellent breed for the table, and he did not see why Mr. Brooke should not recommend them to farmers. He could not keep Dorkings or Spanish, and yet he could keep Malays. He would be glad if Mr. Brooke would give them his reasons why he would not recommend them to farmers.

Mr. Masfen said he had listened with very great pleasure to the remarks of Mr. Brooke. So far as his remarks about Dark Brahmas were concerned, he was very much disposed to agree with him, from a farmer's point of view, that they were a very profitable breed. That, he thought, was the forty-fourth day of continuous frost they had had, and he was happy to say that it was the only time he had had eggs every day in his life, and these eggs were the produce of the Brahma kind. Mr. Lowe had alluded to the fact of the present generation of farmers' wives looking with contempt upon the poultry [laughter]. He was happy to say that idea did not reign at Pendeford. A statistical account was kept by his wife, and she could tell them what she made out of the poultry in the year. He mentioned also another instance, and said, therefore, he thought his friend Mr. Lowe was going beyond the mark in saying the farmers' wives did not look after the pounds, shillings, and pence in the poultry department.

Mr. Wright said for more than a quarter of a century he had kept poultry, and had had profits to a considerable extent. He considered that they could not lay down any strict rules as to the breed of poultry to be kept universally. There would be differences of climate and of soil, and some would be inconvenienced in the room required for keeping them. With regard to the keeping of poultry generally, he found that they required two runs or two yards for their old and young birds. Unless they were able to provide that accommodation, it was almost impossible they could keep poultry satisfactorily [hear, hear]. They found they cost them double in corn, and in the course of a year or two their old birds became unfit for use. He advocated the use of out-barns for that purpose. But the most important question for them was to consider the best kind for a farmer to keep. He thought Mr. Brooke would give up the Brahmas. One of the best and oldest birds was the Dorking. It was certain the number of eggs they laid was no

equal to those of the Cochin or the Hamburgh, but for the table there was nothing to equal them. Of course in some localities, where the soil was damp, he did not think the Dorkings would do very well. Another objection was they were rather delicate, and liable to have the roup; but this, he thought, arose very often from the overcrowding. With regard to the keeping of fowls, he said he had a very large range for them, and he had the roosting place swept out every morning, and some of McDougall's powder scattered about. He would recommend every stock-keeper to use this for the prevention of disease. He had kept the Hamburgh, and for an amateur there was nothing superior to the Silver-spangled Hamburghs. They laid almost for ever, and for the table there was no poultry that would surpass young Silver Hamburgh chickens. The Game were very fine, but they were rather leggy. They had been known to lay more than 300 eggs in a year. A good deal depended upon their situation. At any rate they were constant layers. He spoke favourably of the old Pheasant fowls, Moonies, or Redcaps, as they were called. Nothing was more worthy of the attention of any gentleman than the old Golden Pheasant. The Cochins, as a rule, were very good for the table, but he complained that they had too much a propensity for sitting. With regard to the Malays, they were a very valuable fowl, and he was surprised they did not receive more attention. Speaking of the question of crosses, he thought it was a mistake; but the best of all crosses was a Brahma and Dorking. He was sorry to say with regard to the Dorking that they did not exhibit so strongly at the last poultry show as they had done. This he attributed to the drought of last year, which caused the worms, upon which the fowls often fed, not to be so plentiful.

Mr. Brooke in answer to the question put to him why he did not mention the breed of Malays, said that they were very long in the leg and looked unsightly in the market, and people would not therefore buy them. Then, again, he did not recommend them to farmers because they were very pugnacious, and it was very hard work to keep peace amongst them [laughter]. After again recommending the Brahmas, he said he had listened with pleasure to the discussion, and he hoped that at some future day they might have more discussion on the same subject.

Nantwich Poultry Show.—I sincerely hope that another year the Committee will open the Show to general competition, and offer prizes which will induce some of our most prominent exhibitors to send, and that the ladies in the neighbourhood will render their assistance, and give cups for those classes which your correspondent considers so miserable. Then, should he favour us with a report next year, we shall hope that his praises may be more evenly divided.—Spectator.

Woodbridge Show.—This Show will take place on the 15th and 16th of March next., and deserves encouragement. There are six silver cups value £5 5*s.* each, and three of £3 3*s.* for poultry, and a point cup of £3 3*s.* is also offered in each section of Pigeons and Cage Birds. The prizes for poultry are 20*s.* and 10*s.*, for Pigeons 15*s.* and 7*s.* 6*d.*, and for Cage Birds 10*s.* and 5*s.* If desired, money will be paid in lieu of a cup. There are twenty-three classes for poultry, fourteen for Pigeons, and sixteen for cage birds.

CRYSTAL PALACE CANARY SHOW.

I should like to have given a more extended notice of the Norwich variety than I had time to do last week, the entries in the eight classes apportioned to them including, as they did, more than one-half of the entire number of birds exhibited in the thirty three classes of Canaries proper and Mules, but I was very tired. I had had a busy day. The notes I had scribbled on the margin of my catalogue on Saturday were some not very legible, and others not very clear as to their meaning, and I had paid a flying visit to the Palace to refresh my memory, and take a final peep at the gems of the year. No great undertaking certainly; but why did I leave home in tight boots? At my time of life I ought to have known better. I was very jaded when I returned to my hotel, and the bare idea that the printer was waiting for "copy," and that I might at any moment receive a visit from one of his imps, was in itself quite enough to paralyse my energies. Besides, there was what we call in the north, a meat-tea waiting for me. A meat-tea is tea with "something to it," and my something to it was a steak. Those who thought my last week's notes not equal to the subject must make allowance for human weakness. I handed my hasty memo to the imp in attendance, who, by the way, was not an imp at all, but a most courteous member of the staff at No. 171, promising to—"supplement them next week." That was his composition, not mine; but when I saw it in print on Thursday I thought it read very well. I think it's very neat.

I was not sorry to have had some sort of excuse for paying my second visit to the Palace, and was well repaid by meeting friends I know only by name, as well as old faces I had not seen for years. Before leaving—and it's hard work to get away from the birds while there is any light to see them—Mr. Bemrose and Mr. Walter, with Messrs. Cockle & Watson, "shed a tear" with me at the extreme end of the Tropical Department, where the thin slices of ham are spread out on cold marble slabs to bleach. We had a deal to talk about and not much time to do it in, and with many regrets that there is not a British National Canary Society of gentlemen, holding its annual show in various towns in England in rotation, and having its annual meeting of parliament, we said good-bye, longing for the time when the fancy will take the matter up in earnest, and carry out a project as simple in itself and in its working as A B C.

Mais revenons à nos moutons. The Show was not held in the Tropical Department as of old, but in an elegant tent or awning erected in the nave between the transept and the Christmas tree. The arrangements were excellent, and inasmuch as the unbroken area allows of a more regular and systematic grouping of the cages than is practicable in the Tropical Department, the tent is in this respect the better place; but, I think, in this respect alone. Exhibitors, I was told, were much pleased with the arrangement, as well they might be, for the subdued light would add many shades of colour. As far as judging is concerned, the light was "as fair for one as another;" but that is a wrong principle to start with. I have no hesitation whatever in saying that many birds bought under the shade of the tent would not have been recognised by the uninitiated when exposed to an open light. Undoubtedly it is to the interest of dealers to have their wares shown to the best advantage, but the Crystal Palace Canary Show claims to be something more than the great market it is. The Tropical end was beautifully warm. That is the place for the Show. Any screen arrangement which can be devised to keep off draughts I should cordially approve of, but by all means have a clear light. How the Judges managed without taking the birds from under the awning I cannot imagine. They must have had a very arduous task.

Before passing to the Belgians in my promise to "supplement my remarks," I revert to the Norwich birds just to say in general terms that Derby seemed to be somewhat out of form, Norwich was in force, Northampton came up smiling but a little exhausted from loss of blood, and Coventry showed its ability to fight in any arena.

There was only a very small entry of Belgians. The *Daily News* of February 11th said, "France and Germany are scarcely represented, and Belgium sends fewer birds than usual." I don't think the *Daily News* is in the fancy. The importation or non-importation of Belgian Canaries is not the cause of the paucity of entries. There are plenty of Belgians, first-class Belgians, in the country; but it is a great risk to send such delicate fragile things from home at this season of the year, to say nothing of six days' exposure in open wire cages. I am not referring to birds such as some I saw in Classes 9 and 10. I mean Belgians. No bird is so sensitive, or suffers so much from the exposure and excitement of a show as a high-bred Belgian. I use the word excitement advisedly, for I have seen specimens the centre of such a circle of attraction, that the poor things were being "put up" throughout the entire day, and had scarcely any time to eat a grain of seed. But then they were Belgians, and not things as devoid of shape as Adam's inexpressibles. The classification, too, has something, nay, a great deal, to do with the slack entry. I have before enunciated my opinion on this matter in the columns of the Journal, an opinion which I believe is entertained by most admirers of this remarkable bird. In brief, I maintain that it is essentially a position bird, and that colour is a secondary point; that the presence of a simple *bonâ fide* tick (not a blotch—every fancier knows what I mean), is no detriment whatever to a Belgian; that the highest-bred clear birds will throw ticked young ones; that both clear and ticked belong essentially to the same school; and that if there be not a separate class for the ticks (for which there is no real necessity), both should compete in the same class. The Variegated Belgian is another bird altogether. The marking has been imported from some other variety, and though perhaps nearly all trace of the cross has been bred out, still the cross is there precisely the same as among some of the variegated Cinnamons till recently in vogue among north-country fanciers. I have seen Cinnamons, selfs and variegated, as high up in Belgian properties as many so-called Variegated Belgians. To class ticked birds with these is manifestly absurd, since they belong to two different classes; but if they be, however much at variance with common sense, grouped together in one, and yet have to be contented with two prizes while less comprehensive classes have three, one cannot help tracing the small entry to causes other than those assigned by the *Daily News*. The best bird in the four classes was No. 328, a good bird, J. N. Harrison. Mr. Doel's were in Norwich cages, and seemed afraid to stand up. No. 340, G. Tuckwood (who knows a good bird and spares no trouble to get it), was more massive in the shoulder than most of its compeers. Mr. Poole, of Notts, was second in the clear classes with birds of no great merit. I tried them all, but could develope no great beauty in any. The subscription list for the cup for this variety did not fill, neither did that for the Norwich, which is a thing "no fellah can understand."

The London Fancy made a brilliant show with thirty entries, among which the well-known names of J. Waller and W. Brodrick were conspicuous. In Jonques Mr. Brodrick showed two, and was first and highly commended, while Mr. Waller was second, third, and very highly commended with the remaining five of his seven entries—a great performance. In Mealies Mr. Waller was first and carried off the cup, which the half dozen enthusiastic admirers of this remarkable variety had no difficulty in raising, with a glorious bird well moulted, though I fancied it had a foul feather on each side of the tail. I do not say this as reflecting on the Judges, for even if it were so there were no doubt sufficient counterbalancing points to enable it to occupy its proud position, and they would have a better opportunity than I for careful examination. Mr. Waller's remaining four birds all re-

ceived the highest commendation, Mr. Brodrick being second and third with his two entries, the whole being birds of great quality, rich colour, and excellent feather. It may be that many, when looking at the London Fancy Canary, are not aware of the peculiarity which attaches to it, and the extreme difficulty in bringing it out in show condition; and it may be matter of surprise to some to know that those deep orange birds with their jetty black wings and tail are, when in their long clothes, not more comely than a hedge Sparrow, and it is not till they are short-coated that they change their sombre garments for that rich jonquil dress which contrasts so strikingly with its black trimming. This costume they wear for only one year, for at the second moult, when they, in common with other birds, first change their wing and tail feathers, the black is replaced by white, or at best by grizzly grey, and the bird retires from the scene of his victories into the more sober quiet of domestic life, spending the remainder of his days in his homely suit, while his olive branches grow up about him clad in the fashionable attire of his early manhood, only in their turn to undergo the same remarkable metamorphosis.

This tendency to change of colour is to some extent shared by the Lizard; and as it is with some a question whether a greyhound is a deteriorated bulldog, or *vice versâ*, so it is a moot point with many whether a Lizard be a degenerate London Fancy, or a Fancy be a degenerate Lizard. They have some points in common, and are occasionally crossed, as is evidenced by entries in the "Any variety" class, but not to the extent some suppose. Though a great admirer of Fancies, I am not a breeder of them, and so can say little as the result of my own actual experience. I do not call a man who buys a pair of Fancies and rears a nest or two a breeder proper. It is from such men as Mr. Brodrick and Mr. Waller, who have made it a life study that we must be content to learn; and Mr. Waller assured me in a most interesting chat I had with him, that it is not a practice to cross the Fancy and Lizard, that the deep black wings and tail have not been derived from the Lizard, but are native to the bird, and that by judicious pairing London Fancies will continue to produce such birds as were at the Palace without any foreign admixture whatever.

Fifty-one Lizards were staged, Mr. Ashton being first both in Gold and Silver-spangled. The cup was awarded to No. 403, the Golden bird, but I inclined in favour of No. 425, than which few finer Silver-spangled Lizards have been seen. I say it modestly, having no wish to rub anyone's hair the wrong way. The cup bird was certainly beautifully spangled, well capped, though slightly defective in one eye, and just a little uneven at the back, and very bright, and clearly merited its position at the head of the class; but the Silver-spangled gem was well calculated to make one break the tenth commandment. Mr. Judd was a good second in the Golden class, with a finely-spangled bird, though a little run on the flights, and Mr. T. W. W. Fairbrass, of Canterbury, third with a strong lusty bird also slightly run. All his birds showed that rich bronzy tinge so much desired by Lizard fanciers. I do not want to be taken to task for adopting the word "bronzy" as conveying my idea of the shade of colour I refer to, but I use it as opposed to that greenish tinge which is often present. No. 397 (Fairbrass), a hen, was claimed at 50*s*. I observed no commendation attached to her, but I thought her a remarkable bird. Mr. Tuckwood's birds also were of the right stamp, and altogether it was an excellent class. In Silvers, Mackley's second pleased me much. Not so No. 409, third prize, which though rich in colour was not remarkably well mottled. Nos. 410 and 411, G. Harrison, were good, and 422, Fairbrass, not mentioned, was a fancy of mine. I apprehend that the defect in the front of the cap was a bar to its commendation. To No. 424, Adams & Athersuch, I find I have appended the remark, "high colour, fine cap;" and to 426, Ashton, "in a cloud:" it was very much run, and as compared with 422, not worth its diploma.

There were only two prizes to each of the three classes of Cinnamons, numbering in all seventy entries, an inconsistency which I have no doubt will, with other defects, be remedied next year. Northampton as usual was strong, Mr. Irons taking first in Jonques, and Mr. Tomes second with a bird which, I think, was beyond compare its superior. I blame the awning for it. No. 430, Gayton, and 445, Spence, were very even in colour, a great point in Cinnamons, for with high colour comes an objectionable stripe, the presence of which is an eyesore to the fancier. Mr. Waller showed three birds not to be despised, which were soon claimed. No. 444, H. J. Ims, very highly commended, was a mistake of the tents. Mr. Waller was first in Buffs with a great bird, and Mr. W. Gamble second with an unmistakeably fine specimen, with Moore & Wynn and the other Northampton representatives close up. The tent was wrong again with 477, J. Hadland.

The awards in the Marked or Variegated Cinnamon class were made on a plan altogether different from that adopted last year. The object of this class, what is to be aimed at, should be more clearly defined; "Marked or Variegated" is very vague. However, assuming it to mean, when applied to Cinnamons, a bird having cinnamon markings, the question is, Should the bird be judged for general style and quality apart from the regularity of the markings? or is exactness of marking to be considered of as much value as in an Evenly-marked Norwich? Last year high-coloured, irregularly-broken birds scored the highest honours above others marked with great exactness. This year the case was reversed; exactness ruled to the subversion of colour and quality if combined with irregularity. The fact is, the two classes are as wide apart as the poles. The one is the result of crossing with the Norwich to obtain colour with as little disposition to break as possible; the other is the result of careful crossing with Belgians, with especial care to retain a disposition to break into regular markings. The type of the one class is a bird of Norwich build, having a rich body colour, with patches of cinnamon here and there; the type of the other is a long, slim, graceful bird, evenly marked on the wings and eyes, in which colour has, to a great extent, been sacrificed for some approximation to a fixed character for shape and exactness of marking. Such a specimen was No. 482, Bemrose & Orms, first prize, and were such clearly understood that to be the recognised standard, many a beautiful bird of that stamp would be sent from the north, where the Cinnamon has for years been grafted on the Belgian to attain similar results. No. 485 (H. Apted) may be accepted as a good example of the Cinnamon Norwich, an intermediate step between the old Dun and the modern school of bright Cinnamons so deservedly popular.

The Any other variety class was not very interesting, but it contained one or two good samples of the Manchester Coppy, with one of which Mr. Ashton was first; two good Marked Yorkshire, 500 (Stansfield), second, and 508, Hawman; one solitary Glasgow Fancy, No. 510 (Baxter), third, a good representative of the graceful favourite of the other side of the Tweed; and divers nondescripts, among which one figured as a "Green Hybrid" (?), and four were described as "Buff and Yellow" (?).—W. A. Blakston.

IS THE RABBIT FANCY ON THE DECLINE?

No; but, on the contrary, steadily increasing every year. Just refer to "our Journal" of December 15th, 1870, and read the report on the York Shows, from their first one in 1864 to that held in 1870, and it will be found that in the first-named year there were only fifty entries of Rabbits, while in the last year the surprising number of 124 entries were made. Can anyone, with such an instance as this before him, say the Rabbit fancy is on the decline? The York Show is not the only case I could quote.

Mr. Millington may continue his notes about the value and scarcity of the Lops, but he will not thus better their position in the various prize lists, much less by saying that the fancy kinds are so cheap and so very plentiful; on the contrary, he has materially aided me in my endeavours to get the varieties better classed, and to the Lops he has given rather a sore hit. For any committee to offer more prizes for a scarce variety than for a plentiful variety would be out of all reason, for committees generally offer most to those which secure the most entries.

As to the club, I think it an excellent suggestion, and am ready to do all I can to further the proposal. I would suggest that the subscription be 5*s*. instead of 1*s*. annually, and that whenever a Rabbit show is held, a member living nearest the show should have his expenses paid to look after the members' Rabbits only, and see them fed and properly repacked for home.—Jas. Boyle, jun., *Blackburn*.

THE GREAT BUSTARD IN WILTSHIRE.

A Great Bustard has recently been killed on the old haunt of that bird—Salisbury Plain. I notice that in some of your contemporaries it is stated that no bird of this kind has been seen in Wiltshire for fifty years. I am in a position to state that this is incorrect.

In January, 1856, a male Bustard was wounded by a shot from one of Lord Ailesbury's keepers, and two days afterwards was, strange to say, captured by a little boy of only seven years old. It was subsequently purchased by my late neighbour, Rev. G. T. Marsh, the Vicar of Sutton Benger, Wilts, in whose valuable ornithological collection I have very frequently seen it. At Mr. Marsh's death, in 1862, it became, I believe, the property of his brother, Mr. Matthew Marsh, late M.P. for Salisbury.

The particulars of the capture of this Bustard are so singular that I will relate them, as they may interest some of your readers. The keeper shot at the bird whilst it was flying, not knowing what bird it was, or ignorantly fancying, as it was such a large bird, that it must be an eagle. The distance was great, and as the bird flew on apparently unharmed the keeper thought no more of it. A few days after a little farm boy aged seven saw a large bird laid down and fluttering in a turnip field. The lad, a brave little lad, caught it by one wing, and dragged it (the bird was weak with hunger and loss of blood), across the field for a quarter of a mile, and took it to a barn, where a man broke its neck. The labourers in the barn had just come in to dinner, and wanted to pluck and dress the bird for that meal. However, the lad stalked off with his property on his back, and sold it for one shilling. My friend Mr. Marsh was glad to give twenty sovereigns for it a little time afterwards. I have often looked at the bird with great interest, and wondered how a little fellow dared to capture it, for it measured from wing to wing more than 6 feet.

I knew two other gentlemen who had seen Bustards in Wiltshire. The late Rev. Robert Ashe, the Rector of Langley-

Burrell, caught a young one, and tied its legs with a pocket-handkerchief, and hid the bird in a hole until he had taken Divine service, but afterwards found neither bird nor handkerchief. The late Mr. William Lanfear, of Christian-Malford, had also seen more than one on the Plain, and one that was captured and kept for a few days by a cottager in a pigstye.

Indeed, it is a mistake to think that no Bustards have been seen or killed of late years. One was shot in Cornwall in 1843, and one near Stonehenge in 1849. Recently Bustards have been seen, I believe, in Yorkshire, as well as in Wilts. It seems strange that they always are found in those counties in which they once were common. Then, it is odd that now all the country is divided into farms, and on farms labourers are constantly working, yet, save now and then, Bustards, birds as big as Turkeys, are not seen. How to explain this I know not, and that Bustards could fly over the sea is out of the question, and if they could they would be seen in Kent or Sussex. Must it not come to this—that a few birds, though under great disadvantages, still exist, and breed, and bring up a very few young ones?—Wiltshire Rector.

UNICOMB HIVE.

In reply to "An Amateur Bee-keeper," who requests some information respecting the construction of a unicomb hive, I think I may be able to render him some assistance by giving a rough description of one contrived by myself two years ago, and which, in practical use, answers remarkably well.

The first object which should be aimed at in one of these interesting appendages to an apiary, should be the greatest possible facility for peopling it either with a swarm, or with the contents of an established stock. The second should be, that when not further required for observatory purposes, or in order to save the colony through the winter, the combs and bees may very readily be transferred into quarters more congenial to their natural instincts. To carry out this principle, I decided on adapting the interior of the hive for taking the moveable bars and combs from my frame hives. Great care was requisite to insure that the various measurements were made correct, and that any bar from any hive in my apiary should be capable of being slipped into or out of the hive in a moment.

After some consideration, I decided on having a long shallow hive instead of a deep one, and planned it to take three full-sized combs in length, by two in depth.

The bars of the frames used by me are nearly 14 inches in length; the depth of the combs when fully worked in the frames is about 8½ inches. The length of the hive measured from outside to outside, is 3 feet 10 inches, and the depth nearly 1 foot 10 inches. The frame is constructed of 2-inch plank throughout, rabbeted so as to form a series of recesses for the doors and glass sides, and the comb-bars to fit in.

When the glass sides are *in situ*, the distance between the two glasses must be exactly 1⅛ of an inch, or not exceeding 1¼ of an inch. For these sides light wooden frames without divisions are made, into which are fitted entire sheets of good, thick, clear glass, held in without putty by narrow slips of wood. These glass sides have no hinges attached to them, but are simply slipped into place, and secured at the top by small buttons, similar to those used for the inner part of writing desks, and at the bottom by two small sliding brass bolts, shooting down into the floor-board. A couple of small picture rings attached to the bottom rail of each frame will facilitate their handling.

The top, sides, and bottom of the outer hive are all morticed together, the bottom being 2 inches wider all round than the top and sides.

The outer wooden shutters are made in halves to meet in the centre. They are framed and panelled; the panels being of the same thickness as the frames—viz., ⅞ inch when finished. They are hung on shifting butt hinges, so as to be easily slipped off or on, are fitted with sliding bolts, and secured by locks. The entrances, 4 or 5 inches long, by ⅝ inch high, are cut in the thickness of the floor-board on either side, sloping up and meeting in the centre of the interior, where they are opened out. An alighting-board is also attached to each side. Blocks of wood are fitted to slip into either of the entrances when the hive is turned round for observation.

The hive revolves, having an iron pin attached to the bottom, fitting into a socket let into the top of an octagonal pedestal. Turning to the section of the interior, *fig.* 1, we find that the upper bars do not touch the top, but have a space of ⅜ of an inch between them and it. This serves two purposes—first, it brings the upper parts of the combs down nearly level with the highest portion of the glass; second, it allows free passage to the bees over the combs, an advantage for work, and useful when feeding. An aperture 2 inches long by ¾ inch wide, is cut through the top for this purpose, and for ventilation. Four side apertures are also cut, being closed with perforated zinc

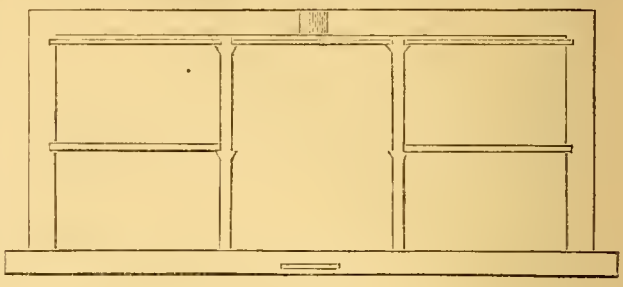


Fig. 1.

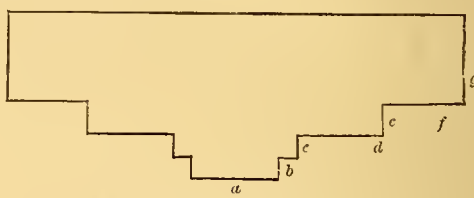


Fig. 2.—2⅝ inches, one-half the actual size.

a. Projection for combs, and rests for bars, 7-8ths inch.
b. Rabbet, ¼ inch.
c. Ditto for glass side to fit against, ⅝ inch.
d. Recess for glass side, ⅜ inch.
e. Rabbet for wooden shutters to rest against.
f. Recess for wooden shutters, ¾ inch wide.
g. Side of frame, ⅝ inch.

when the bees are confined for exhibition at a flower show or other occasion. When not so required, blocks of wood are made to fit them. Two uprights are necessary to serve as supports for the comb-bars. These are ¾ inch wide, by a general thickness of ⅝ inch, but they are made thicker just under the ends of the bars so as to form rests.

The distance between the bars when in place is exactly 8 inches. This is narrower than the interior space of the frames, the object being, that when combs are shifted from the frames into the unicomb hive, the bottoms of the upper row of combs shall reach to the tops of the second row of bars, for the double purpose of security and appearance; besides which, if there are spaces between the combs in the centre of the hive, the queen will constantly be slipping through out of sight. The space below the middle bars is 8½ inches. An ornamental roof made sufficiently roomy to allow of a feeder being used fits on the top of the hive.

I have hitherto described the hive as I have constructed it, but it is not necessary that the shape or dimensions I have given should be adhered to. If preferred, the hive may be made deeper and shorter—that is, to carry three rows of bars in height, by two in length. Or if thought to be too large for the district, or the requirements of the bee-keeper, a hive intended to carry four bars only may be constructed.

If "An Amateur Bee-keeper" uses the Woodbury hive, I should recommend him to alter the measurements I have given, so as to adapt his hive to the use of the Woodbury bars. If he does not work bar or frame hives, he can make his unicomb hive to carry bars of any length he pleases. In the latter case he will require a box hive to be made, holding the same bars, for the purpose which will be described.

We will suppose that the Woodbury bar-and-frame hive is in use in his apiary, the bars, of course, being loose in the frames. One of these hives being properly prepared and furnished with nice guide combs, a swarm is shaken into it in the usual way, and allowed to work for two or three days. The hive is then opened, and the combs inspected, any irregularities being remedied. It is a good plan to alter the position of the combs in order to compel straighter work. The bees are allowed to remain in this stock hive for a few days longer, and then the unicomb hive being brought to the same stand or locality, the outer doors and the glass frame of one side are removed. The stock is placed close by the side of the unicomb, the bars are carefully lifted out without shaking off the bees, and slipped

into their respective grooves or rests. Those combs containing the most brood are selected for the central portion of the observatory hive. When all the combs that can be inserted are put in it will be necessary to see that they rest evenly, and as soon as possible the glass side should be slipped into place gradually, using very little pressure to allow the clusters of bees to disperse a little before finally pushing in. This being done, run in the bolts, and hang and close the outer shutters. Shake off any bees that may be loitering in the stock hive, remove the box out of sight, and the bees will soon find their way into their new domicile.

If "An Amateur" should not be in the habit of using bar-hives, he must make a simple box to receive the bars of his unicomb, and in this case he need not be particular as to the length of the bar he chooses. He would find four bars of 16 inches in length and made to carry combs of 9 inches in depth, would make a very nice-sized unicomb. In other respects he may follow the directions I have given.

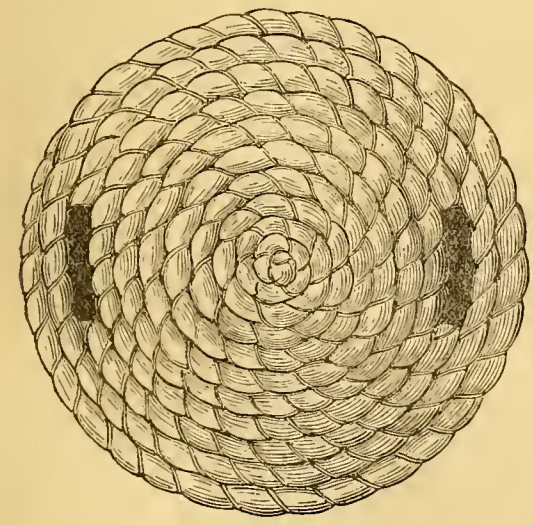
Towards the close of autumn, or when the observatory hive is no longer needed, the outer doors are unhung, the glass sides removed, and the bars, combs, and bees transferred into the stock box, which must occupy the same position as that to which the bees have been accustomed. It will generally be necessary to afford the bees a liberal supply of artificial food, or a full comb or two from another stock may be given. I omitted to say that when bar-and-frame hives are in use in an apiary, an observatory hive constructed on this principle may be stocked at a moment's notice. It is only necessary to visit any prosperous stocks, and to remove the requisite number of combs and bees.

I hope the description and directions given will be sufficient for the guidance of "An Amateur Bee-keeper," but if he should require further information I shall be happy to assist him to the best of my power.—S. Bevan Fox, *Exeter*.

THE ECONOMIC, A NEW DEPRIVING HIVE.

One of the objects which I have had before me in bee-keeping has been to improve the system as generally practised amongst my neighbours; but hitherto the great hindrance has been the want of a really good depriving hive at a moderate price—a want frequently expressed in your Journal.

In conjunction with Mr. James Lee, of Windlesham, I have endeavoured to supply this want by introducing a hive at a moderate price, combining all the most recent improvements. The lower part, or stock-box, is simply a well-made round straw hive with a flat top like Payne's, but with no hole in the centre, the communication with the super being removed from the centre towards the sides of the top, as in the accompanying



figure, thus removing the great objection to Payne's hive, the liability of the queen ascending into the super and depositing brood, it being now a well-ascertained fact that she is most unlikely to ascend where the communications are at the sides of the top.

The great difficulty in making the openings at the side of the top was to avoid weakening the crown of the hive, and to get a perfectly even surface to allow of the true adjustment of the adapting-board. This, of course, has holes corresponding with those in the straw, is wasp-proof, and may be of any shape. In the present instance it is octagonal to correspond with an octagonal super. Perhaps it would be as well to fasten down the adapting-board permanently with brass screws before using the hive. This octagonal super is of wood, 13 inches wide by 5½ deep, inside measurement, and has two small windows to show when the comb is sealed, is fitted with moveable ribbed bars as in the Woodbury supers, and like them has a glass top in a wooden frame, which affords a good view of the super. This top can be removed for the abstraction of the combs.

As regards the price, Mr. Lee will supply the complete hive, including straw stock-box, floor-board, adapting-board, and octagonal as above, at 10*s*. 6*d*. Considering its many advantages and moderate price, we have named it, by way of distinction, the Economic Hive.

Another consideration in view in the construction of this hive was to meet the wants of those who cannot afford a shed or the protection necessary for a wooden hive. This hive may be sufficiently protected by an American cheese-box and the old-fashioned milk-pan. These should not rest immediately on the top of the hive, but be slightly raised by small blocks of wood to allow the air to circulate between them, in order to keep the hive cool. At the same time there is nothing equal to a shed open in front, if it can be had or conveniently placed. All depriving hives require as much shade as possible, especially from midday and afternoon sun.

Lastly, to meet the wants of those who cannot afford 10*s*. 6*d*., Mr. Lee has agreed to sell the straw hive constructed on the above principle separately at 2*s*. 9*d*., or 15*s*. the half dozen. With this as a basis, any man of ordinary intelligence may easily construct a perfect depriving hive. A piece of wood for an adapting-board is easily obtained, and boxes of all shapes and sizes may be had at a very moderate price at the grocers'. A lady sends me all her milliner's boxes for the purpose. If preferred, two supers can be used side by side, the second being put on when the first is half filled with comb, or when the bees seem to require more room.

For further particulars about the Economic Hive I must refer your readers to Mr. Lee, whose advertisement appears in your columns.—H. C. Ripley, *Burton Abbots Vicarage, Oxon.*

OUR LETTER BOX.

Caponising (*Alpha*).—It is a cruel, dangerous, and needless practice. Cramming is equally so, for a fowl cooped and fed naturally on nourishing food will fatten in a few days. The town you mention is surpassed by others since the introduction of railways.

Brahma Hens' Backs Featherless (*G. R.*).—In other breeds we should say that their mates had pecked them, but that is unusual with Brahmas. If the swelling and redness are in what we should call the abdomen it is perhaps natural; but if it be all round the insertion of the tail, then their companions have had to do with them, and all you can do is to separate them. Rub the bare places with compound sulphur ointment, and give the birds plenty of large sods of growing grass cut with 3 or 4 inches of mould. They eat the feathers because they lack something their runs do not afford.

Dark or Light Brahmas (*Woodlark*).—There is no difference in the Brahmas except the colour. The Light have the same properties as the Dark, and in some shows they have been equally numerous. It is wicked and unprofitable to stop the desire to sit in a hen, and it is almost impossible. Every man thinks the world was made for Cæsar, and that he is Cæsar. A man asks whether, if he pick the breast of a hen and whip it with stinging nettles, it will make her sit!

Scurf on Cochins' Legs (*Lemon Buff*).—We do not believe it to be infectious, but we would not risk it. Sulphur ointment is the application for it. Canary seed and millet in the spray are the best food for Grass Parakeets. They like green food.

Pheasants are not Poultry (*W. F.*).—For a cup to be awarded for the most points in poultry, Pheasants ought not to be allowed to contend.

Diseased Dorkings (*A Constant Reader*).—They have diarrhœa, caused probably by the changeable weather. Give each fowl five grains of powdered chalk, one grain of opium, and one grain of powdered ipecacuanha twice a-day until the looseness is checked, accompanied by a warm soft diet, such as oatmeal mashed with a little warm ale.

Judging Brahmas (*J. L.*).—It is impossible for us to give the reasons for the awards made by the Judges. The single fact that we know nothing of the competing pens or their merits would prevent us. But, speaking of general ideas, we have no reason to be silent. In an open class, where all ages come into competition, a careful judge should weigh the merits of each, taking age into consideration. The young should not suffer from their want of age as compared with their elders. It is their disadvantage that they have no class for themselves. Mere weight should not decide, because the chickens in that point cannot compare with adults. The latter have an advantage in their freshness and the beauty of their plumage. These points should be allowed as a counterpoise to those parts that are the peculiar properties of age. We do not believe that any of our experienced judges pass over chickens because they are chickens, and we think you will do better to agitate for separate classes rather than withdraw from exhibiting.

COCHIN'S COMB TIPS WHITE (*E. D W.*).—The cock's comb is frozen. Rub it thoroughly and frequently with very strong camphor ointment.

BREEDING BLACK HAMBURGHS (*Black Hamburgh*).—We are unable to give you positive answers to your question. With regard to mating your birds, you must buy your own experience. Birds take, as a rule, more after the hen than the cock. Presuming you have cocks and hens of the Black Hamburgh well bred on each side and of different strains, we advise you to mix the two, putting in each case a cock of different strain with the hens. In these manufactured breeds it is not necessary constantly to have recourse to the component parts. It is only when some essential property appears to be dying out that a bird possessing that particular point should be introduced. If we had two pens intended for the manufacture, we should put the darkest Golden-spangled Hamburgh hens we could find with a Spanish cock, and the darkest cock with Spanish hens; we should then interbreed with the produce. If you are bent on making your own birds you can do so, but where there are so many good specimens to be bought we are inclined to think "*le jeu ne vaut pas la chandelle.*"

MATE FOR A LEMON BUFF COCHIN COCK (*Alpha*).—You do not tell us the bird you wish to produce. If Silver Cinnamon, put hens with French white bodies and light brown necks. If Buff, take hens or pullets of one entirely very dark buff shade all over. There must be no mixture, or it will perpetuate the mealy wing in the cock. If Lemon, choose lemon, but without a lighter hackle. Give your sick fowls some chalk pounded and mixed with their food.

DORKING CHICKENS' TOES DISTORTED (*B. B.*).—We cannot tell why the toes of your chickens turn the wrong way, unless they are kept on an improper floor, such as wood, stone, or brick. If they are, either remove them, or, if that is inconvenient, cover the flooring with dry dust or road grit some inches thick. If there be no reason of this sort, we should say, at any rate, they will grow up so slightly deformed as to cause it to be immaterial at an exhibition.

FOWLS FOR EGG-PRODUCTION (*Kettering*).—Pencilled Hamburghs lay a large number of eggs. They did so in this case, as we consider the number you have named a large result. We know none that would lay more, but some would lay them larger. Brahmas, Spanish, and Crève-Cœurs are all good layers, and do well in confinement. The two last lay very large eggs.

FLOORING OF A POULTRY RUN (*E. M.*).—The flooring of the house should be of hard earth, the rest of the run, earth; in one corner a heap of road grit, in the other a heap of bricklayers' rubbish. Fowls in confinement should have as often as possible, sods of growing grass cut with plenty of mould to them. Give barleymeal instead of whole corn. The kitchen scraps are good. Potatoes are not so.

CROSS BETWEEN BLACK HAMBURGH AND BLACK GAME (*T. B.*).—If you breed as you propose, we believe you will have some very good Black Hamburghs among the produce. You must expect a good many single combs, and must not breed from them again.

OATMEAL (*W.*).—We hope to give the information shortly.

GROUND OATS (*Oxoniensis*).—The sample you enclosed is food spoiled. The oats we spoke of are ground, husks and all, so fine that they mix up into a paste without any appearance of bran. We bought them for years of Mr. Agate, Slaugham Mills, near Crawley. We do not know whether they are to be had there now or not, but they are largely used in Sussex. We are told it is necessary to have stones dressed on purpose to grind oats sufficiently fine for poultry food. Fowls will not eat such as you enclose to us, nor will such mix. We hope shortly to be able to give an address where a better sample may be had. We cannot tell you where you should buy Scotch oatmeal.

CRUSHED OATS (*H. J. O.*).—Whether damped or dry, they are more nourishing for fowls than pollard.

CARLISLE SHOW.—Mr. J. Mashiter, Ulverston, sent a Brown Red cockerel and pullet (Class 36), and has had a Brown Red cock and hen returned—"I find I have taken prizes under the name of S. H. Stowe, in Dorkings, and Rouen and Aylesbury Ducks.—S. H. STOTT, *Rochdale.*"

DUCK'S EGGS DISCOLOURED (*C. F. F.*).—The eggs are faulty, because the Duck is out of health, and her secretions are at fault. The proof of it is patent. You have two Ducks both treated alike; one lays good eggs, the other bad ones. It is, then, from no general cause. Catch her, shut her up, and feed on oats mixed in a shallow vessel with growing sods and gravel. Feed sparingly.

EGYPTIAN RUNTS (*W. M.*).—We have seen Runts brought straight from Egypt, they were white in colour, and had the appearance of English Runts, only smaller. Very probably they were what English Runts were until bred to vast bulk as fancy birds. It would be a gain, regarding Pigeons in a commercial sense, if a smaller and prolific Runt could be generally cultivated, as the fancy birds are the reverse of prolific.

FLYING TUMBLERS (*X. Y. Z., Hull*).—1st, Your Pigeons never could have tumbled, as they certainly would not have lost that power. After being shut up, Tumblers on being let out always fly and tumble prodigiously. 2nd, The eggs will not be affected beyond the first pair. We have tried it constantly.

CANARY NOT SINGING (*Idem*).—Most likely your bird is covered with red mites, and so out of health. If the cage is old burn it. Then dust sulphur in the feathers of the bird.

CANARY MANAGEMENT (*Several Correspondents*).—We hope Mr. Blakston next week will commence a series of papers upon the subject.

CANARY'S HEAD SCURFY (*C. H. Butler*).—Rub the part affected with a small piece of fresh butter or sweet oil, and supply the bird with green food as soon as it can be had. In place of chickweed give watercress, the heart of a cabbage, a piece of apple, or loaf of lettuce if any can be obtained.—W. A. B.

CANARY'S SKIN IRRITATED (*Ridiculus Mus*).—Discontinue the hemp, and supply with such green food as can be procured at this season. *Vide* reply to "C. H. Butler." Add linseed and summer rape to his Canary seed. Use the bath frequently, and keep up a low temperature.—W. A. B.

PARROTS MOULTING (*H.*).—Warmth and extra nourishment are indispensable. You should alter the food thus, according to an authority on the subject—"Hempseed and Indian corn given separately, each twice a-week, bread and milk, with a few chilies cut small once a-week. On the seed days a little saffron steeped in the water. If great difficulty in the moult, give captain's biscuits soaked, and made hot with cayenne, about three times a-week, and put some liquorice in the water." If the moult goes on quite favourably, and the bird appears cheerful, but little alteration from the common diet need be made, warmth is the great requisite.

CONSERVATORY AVIARY (*Canary*).—A conservatory is not a good place in which to breed Canaries. The better plan is to fit-up a room for the purpose. Put-up the birds early in March, but much depends upon the state of the weather, situation, aspect, &c. As a rule, there ought to be no young Canaries till the old ones can see to feed them at six o'clock in the morning.—W. A. B.

A HIVE'S PROSPECTS (*P. F. L.*).—The stock appears to have gone through the winter in good condition, and you may therefore fairly expect one or more swarms in May or June. These you can place in such a description of hive or hives as may best please you; or you may, if you prefer it, try working your stock on the depriving system by cutting a 3 or 4-inch hole in the crown of the straw hive with a penknife, and cementing thereupon with good mortar a wooden platform (which should be clamped to prevent warping), of sufficient size to accommodate an adequate super.

EMPTY WHITE COMB.—*Jane* is anxious to procure some empty white comb to put into glass supers. She will, therefore, be much obliged if anyone will send her some, or let her know where she can procure any. She will send a post-office order or stamps in payment. Her address is at the office of this Journal.

METEOROLOGICAL OBSERVATIONS,

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude 111 feet.

DATE. 1871. Feb.	9 A.M. Barometer at 32° and Sea level.	9 A.M. Hygrometer. Dry.	9 A.M. Hygrometer. Wet.	9 A.M. Direction of Wind.	9 A.M. Temp. of Soil at 1 ft.	In the Day. Shade Temperature. Max.	In the Day. Shade Temperature. Min.	In the Day. Radiation Temperature. In Sun.	In the Day. Radiation Temperature. On Grass.	Rain.
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
We. 15	30.158	44.2	43.3	S.	37.2	47 8	38 4	51.4	35.0	—
Th. 16	30.215	44.4	42.0	S.W.	37.8	46.2	41.2	64.1	39.8	—
Fri. 17	30.186	44 8	43.5	W.	39.3	50.5	41.0	79.9	38.0	—
Sat. 18	30 255	48.9	7 3	S.W.	39.7	54.0	41.6	77.1	37.7	—
Sun. 19	30.129	46 3	44 6	S.W.	40.5	55.4	33.5	91.1	40.1	0 010
Mo. 20	29.753	47.7	43.6	W.	40.8	49.8	46.2	89.7	42.8	0.070
To. 21	29.929	41.0	39.7	N.	41.2	49.2	38.6	87.8	35.2	0.013
Means	30.089	45.3	43.4	..	39.5	50.4	41.5	77.3	38.4	0.093

REMARKS.

15th.—Rain began at 9 A.M., but only a few drops fell; a dull day.
16th.—Dull day, except a little sunshine about noon.
17th.—Fine mild morning.
18th.—Fresh wind after 5 P.M.
19th.—Very fine till 5 P.M., shower, damp evening; gale at night.
20th.—Fine breezy day, shower 11.25 to 11.40 A.M., fine sunset.
21st.—Very fine morning, rather dull afternoon, shower in the evening.

A very mild week, temperature equal to that usual in the first week of April. Barometer rising fast on the 21st.—G. J. SYMONS.

COVENT GARDEN MARKET.—FEBRUARY 22.

THE markets here have been tolerably firm during the past week, and former quotations fully maintained. Cornish Broccoli is now becoming plentiful and is a great acquisition. A considerable demand has been made among the waterside houses for ordinary Potatoes for shipment to France during the last fortnight; a few frame Ashleaved are to hand, to 1s. to 2s. per lb.

FRUIT.

	s.	d.		s.	d.
Apples.....½ sieve	1	8	to 3	0	
Apricots ..... doz.	0	0		0	0
Cherries..... lb.	0	0		0	0
Chestnuts..... bushel	10	0		18	0
Currants.....½ sieve	0	0		0	0
Black ..... do.	0	0		0	0
Figs ..... doz.	0	0		0	0
Filberts..... lb.	0	0		2	0
Cobs..... lb.	2	0		2	6
Gooseberries ..... quart	0	0		0	0
Grapes, Hothouse.... lb.	6	0		12	0
Lemons..... ℔ 100	6	0		10	0
Melons..... each	1	0		4	0
Mulberries.....lb.	0	0	to 0	0	
Nectarines..... doz.	0	0		0	0
Oranges..... ℔ 100	6	0		10	0
Peaches ..... doz.	0	0		0	0
Pears, kitchen ..... doz.	1	0		3	0
dessert..... doz.	3	0		8	0
Pine Apples ..... lb.	6	0		10	0
Plums..... ½ sieve	0	0		0	0
Quinces ..... doz.	0	0		0	0
Raspberries ..... lb.	0	0		0	0
Strawberries ..... lb.	0	0		0	0
Walnuts.....bushel	10	0		16	0
do..... ℔ 100	1	0		2	0

VEGETABLES.

	s.	d.		s.	d.
Artichokes ..... doz.	0	0	to 0	0	
Asparagus ..... ℔ 100	7	0		10	0
Beans, Kidney .... ℔ 100	2	0		3	0
Broad..... bushel	0	0		0	0
Beet, Red ..... doz.	2	0		3	0
Broccoli ..... bundle	0	0		1	6
Brussels Sprouts..½ sieve	3	0		4	0
Cabbage..... doz.	1	0		2	0
Capsicums ..... ℔ 100	0	0		0	0
Carrots..... bunch	0	4		0	8
Cauliflower..... doz.	2	0		6	0
Celery..... bundle	1	6		2	0
Coleworts..doz. bunches	3	0		6	0
Cucumbers ..... each	1	6		3	0
pickling ..... doz.	0	0		0	0
Endive..... doz.	2	0		0	0
Fennel ..... bunch	0	3		0	0
Garlic ..... lb.	0	8		0	0
Herbs..... bunch	0	3		0	0
Horseradish .... bundle	3	0		5	0
Leeks ..... bunch	0	4	to 0	0	
Lettuce ..... doz.	1	0		2	0
Mushrooms ..... pottle	1	0		2	6
Mustard & Cress..punnet	0	2		0	0
Onions ..... bushel	4	0		7	0
pickling..... qnart	0	4		0	0
Parsley..... sieve	3	0		6	0
Parsnips..... doz.	0	9		1	0
Peas ..... quart	0	0		0	0
Potatoes..... bushel	2	0		4	0
Kidney..... do.	3	0		4	0
Radishes .. doz. bunches	0	6		1	0
Rhubarb..... bundle	0	9		1	6
Savoys..... doz.	1	6		2	0
Sea-kale ..... basket	2	0		3	0
Shallots ..... lb.	0	6		0	0
Spinach ..... bushel	3	0		5	0
Tomatoes ..... doz.	0	0		0	6
Turnips ..... bunch	0	6		0	0
Vegetable Marrows..doz.	0	0		0	0

WEEKLY CALENDAR.

Day of Month	Day of Week	MARCH 2—8, 1871.	Average Temperature near London. Day.	Night.	Mean.	Rain in 43 years. Days.	Sun Rises. m. h.	Sun Sets. m. h.	Moon Rises. m. h.	Moon Sets. m. h.	Moon's Age. Days.	Clock before Sun. m. s.	Day of Year.
2	Th	Meeting of Royal and Linnean Societies.	48.7	34.7	41.7	17	46 af 6	39 af 5	after.	18 af 4	11	12 24	61
3	F		49.9	32.2	41.0	14	44 6	41 5	20 1	6 5	12	12 11	62
4	S		49.7	31.5	40.6	11	42 6	43 5	26 2	46 5	13	11 58	63
5	Sun	2 Sunday in Lent.	48.9	31.8	40.3	16	40 6	45 5	41 3	19 6	14	11 44	64
6	M	Meeting of Entomological Society, 7 P.M.	48.6	32.2	40.4	18	38 6	46 5	58 4	45 6	15	11 30	65
7	Tu	Meeting of Zoological Society, 9 P.M.	49.1	32.4	40.7	18	36 6	48 5	18 6	9 7	O	11 16	66
8	W	Meeting of Society of Arts, 8 P.M.	49.1	31.5	40.3	18	34 6	50 5	38 7	30 7	17	11 1	67

From observations taken near London during forty-three years, the average day temperature of the week is 49.1°, and its night temperature 32.3°. The greatest heat was 70°, on the 4th, 1860; and the lowest cold 14°, on the 3rd, 1862. The greatest fall of rain was 0.48 inch.

RAISING AND PLANTING-OUT SUCCESSFULLY EARLY PEAS.

OF all the important kitchen-garden plants none are in greater variety to perplex the cultivator, being but slightly different in their character, than early Peas. This is sufficiently exemplified in the numerous seed catalogues, almost every nurseryman advocating his own kinds, yet each of these, apparently to a great extent, only some formerly well-known variety slightly altered by local influences. However, it is to be hoped in time to come, for the benefit of the private gardener, that, as much as possible, the number of nominally new varieties may be restricted to the most trusty kinds.

A few days ago I planted out my first earlies. The kinds are Sutton's Ringleader and Dickson's First and Best. I adopted what I may call (at least it is so to me), a comparatively new method of raising early Peas. A little more than three weeks ago I had a lot of boxes prepared. These were about 2 feet long by about 1 foot broad, and 4 inches deep. I had placed on their bottoms three rows of nicely-prepared inverted turves, almost fresh, and fitting neatly to each other. On the top of the turf, in all the boxes, I sprinkled a slight coating of good soil. Then, all being ready, on the top of the rows of turf the lines of Peas were sown. This done, I had the seed covered with a couple of inches of good soil, and the sowing was complete. I had the boxes placed on the floor of a vinery on the move, and they remained there till the Peas had pushed fully an inch above ground, after which time they were removed to a cooler Peach house to harden off the young plants.

On a tempting fine day last week I wanted a number of boxes for other purposes, and not having too many I thought in such weather I could not do better than transplant some Peas to their quarters out of doors. Accordingly I at once prepared a place for planting, by well forking and levelling the ground, which had previously been prepared in the autumn as for most early crops. The situation selected was at the back of a south border, nearly at the base of a Peach wall. As soon as the ground was ready, I had a line stretched at a distance of 6 feet from the bottom of the wall, and by it I cut out a trench the same as for laying Box, only a little deeper, so as to receive some additional fresh loam at the time of planting. I next began to lift the Peas out of their boxes, for these had been just taken out of the Peach house, and with the assistance of a flattened curved piece of iron which I found at hand, I easily managed to remove the first row without injuring the roots. This was the only row that gave me any anxiety in taking it out, for the remaining two rows were lifted out without any difficulty with my hands. Thus, without the slightest injury to the roots, and in the most simple manner, all the Peas were transferred from the boxes to their new quarters. The pieces of turf when taken out were dense masses of loose, beautiful, white roots, and, put into the ground as they were, success may be expected.

One row having been put in as described, I had ready as many hand-lights as would reach to the end of the line, and on consideration I thought I could not do better than put in a second row a foot or so distant from the first one, so that I might, as much as possible, take advantage of the temporary glass. I also thought on the closeness of the plants, but they can easily be staked out. I therefore forked-up ground enough as before, and put in another row, as in the previous case, only a foot nearer the wall. Both rows having been planted, they received a gentle watering, and the hand-glasses were at once put over them. The tops of the lights have been taken off every day since planting, and I have noticed that the progress of the plants has been regular, so that, after all our severe weather, I look forward to have a nice lot of fine early Peas.

The above plan of treating early Peas, as far as the use of the turf is concerned, I have not seen anywhere tried before. However, the method is most excellent, and as the rearing of a good stock of fine early Peas is a matter of great importance to a large number of your readers, I have thought it worthy of notice.—Robert Mackellar.

FORCING PELARGONIUMS.

When successfully grown, I know of no plants that will repay their cultivator better than those belonging to this branch of the Pelargonium family. Their treatment is very simple, and easy to understand, involving little labour, and hardly any expense, but in its results affording much pleasure and profit. These Pelargoniums are more valuable, perhaps, to the gentleman's gardener and grower for sale than to the amateur; still the latter, if he has a heated glass structure, may, with a little care and attention, grow them successfully. From what I have seen of several gardens for some time past I do not consider the varieties referred to are so generally grown as their good qualities entitle them to be. I think they cannot be excelled by any other class of plants for furnishing a rich display in the conservatory throughout April and during part of May; I do not mean isolated specimens here and there, but a batch of two or three dozen well-grown, neatly-staked, and tastefully-arranged plants. Or, if they are required to furnish only cut flowers for sale, or for supplying a family in London (and this is what most gardeners are required to do at the present season), a gardener cannot find in any other plant a more generous and a less capricious friend.

The varieties which I have found most useful for the purpose are Alma and Crimson King among the dark-coloured kinds, the latter especially carrying some very large beautiful trusses excellent for cut flowers; Queen of February and Alba Multiflora among the light-coloured ones; Phyllis, too, another light variety, will force, but is not so well adapted for the purpose as those previously named.

The cuttings may be struck any time between February and the end of September; February and July being, perhaps, the best times for the purpose.

I shall suppose that the cuttings are struck in February.

In selecting them it will appear almost needless for me to say that the stiffer and dwarfer they are the better, and I would not mention this were it not that no man can grow a good plant from a drawn lanky cutting. The cuttings should be inserted singly in thumb-pots, in soil composed of loam and silver sand in equal proportions, and placed under hand-glasses in a brisk sweet heat.

When the cuttings are struck and beginning to grow, the centre should be pinched out in order to induce them to form shoots. When they have done so they should be shifted into pots a size larger, using the same compost, and be replaced in the same situation, shading and keeping them close to the glass for a week or ten days. They may then be removed to a pit having no more heat than that which can be husbanded from the sun, and the amount of which will be considerable by the time the plants arrive at this stage. Whilst they are here do not admit much air, and shut up early in the afternoon. When the shoots produced from the first stopping have developed three or four leaves the points should be again pinched out to induce the formation of more shoots, after which the plants must be shifted into pots a size larger, using some well-decomposed manure in the compost. Shade the plants, and keep them close until they overcome the effects of the potting. Afterwards, they must have an abundance of air by day and a little by night. A light shading with thin tiffany for about three hours in the middle of the day, during midsummer, will benefit them. Since their last stopping the plants will again have produced more shoots, which may be pinched back as before, and now for the last time. I may remark, with reference to stopping the plants, that to secure a good regular head of bloom it is absolutely necessary to stop each shoot at the same time, not, as is too often the practice, stopping a few to-day and a few more in the course of a week or two. All weak or ill placed shoots had better be removed whenever perceived.

The plants should be potted for the last time about the end of July or the beginning of August in a compost consisting of two parts turfy loam, one part leaf mould, and one part rotten cow dung, with a good sprinkling of silver sand. The pots must be efficiently drained, using the riddlings of turf to cover the crocks, and never giving the plants a large shift. Afford plenty of room at all times if possible. Attend carefully to their watering; they will require a liberal supply of water—often twice a-day—during the summer. Keep the plants close to the glass throughout their growing season, but not too close in winter, on account of the fluctuating temperature—extreme heat by day and extreme cold at night—which I believe to be the principal cause of "spot" on the leaves.

The plants should not be introduced into heat until it is certain that the flower buds are formed on each shoot—a fact which is easily ascertained by a practical hand, even before the buds can be seen, by noticing the plump appearance of the ends of the shoots. The plants should never be subjected to too high a temperature, and on no account should they be kept far from the glass. While developing their blossoms they will be benefited by frequent waterings with clear manure water. At this time they may be neatly staked with green stakes, and on the morning of a fine day taken to the conservatory, where they will amply compensate for all time and labour spent on them.

When the plants have done blooming, place them out of doors on an open space of ground, gradually withholding water from them in order to ripen their wood thoroughly. About the middle of July they should be cut back to two or three eyes on each shoot, and be placed in a close pit to be started, as is usual with Pelargoniums. When they have sufficiently broken, put them into the same sized pots; they should not be potted or stopped after this. Fumigate frequently to keep down aphis.

Treated thus, Pelargoniums of this class will flower well for four or five years. After securing a stock it is well to propagate a dozen or more as desired every year, in order that a corresponding number of worn-out older plants may be thrown away.—O. Thomas, *Drayton Manor Gardens.*

RUMEX OBTUSIFOLIA.

I am beginning to think that Rumex obtusifolia will become a very ornamental plant, and may be styled the "Poor-man's Caladium." I have had some very striking forms of variegation in this plant, and about half of them will come true from seeds. The variegation is from pure white to golden yellow, in irregular markings, and sometimes the two hues combined with their intermediate shades; and occasionally a pure white or yellow leaf is produced, and is very beautiful with its red or pink veins.

I have grown Rumex obtusifolia as a pot plant, and although only a Dock it would be difficult to find a handsomer plant of the character for a cool greenhouse during March, April, and the beginning of May, after which time it may be planted out, to be repotted in the autumn. If well managed, in the second year one may produce magnificent specimens fit to adorn any nobleman's garden. I expect to be sneered at for advocating the cultivation of such "rascally weeds" as Rumex obtusifolia.

Of R. acetosa and Acetosella there are numerous variegated sports, but none that I have seen are of sufficient constancy to warrant me in recommending their cultivation.—W. E., *Gardener, Cromwell House.*

THE CAMELLIA, AND ITS CULTURE.—No. 2.

I now proceed to speak of *General Culture.* A good base to work upon in the cultivation of any particular plant is furnished by ascertaining the precise conditions under which it exists in its native habitats. We are not bound to follow these conditions slavishly in all the details of practice, but whatever the modifications we introduce we should never lose sight of the natural life of the plant. No doubt the best way to deal with the Camellia is to plant it in a span-roofed house 30 or 40 feet high in the highest part. The top lights of the house should be moveable, and removed during May, June, July, and August, and a light shading be made to take their place during the day. If the lights cannot be removed, in spring and summer a light shading of tiffany should be run under the glass. Shading is essential during the flowering season and from the time the young leaves expand. The soil should be effectively drained when the beds are formed. A very slight heating-power will suffice, but we cannot altogether exclude this from our calculations.

But however desirable ground culture may be, the Camellia must remain a pot plant for the many. The chief points demanding attention under this head are—repotting, watering, and pruning.

Once a-year at least, in August, every plant should be turned out of its pot and thoroughly examined. If the soil has worked into the rubble at the base of the pot or tub in such manner as to impede the free egress of water, remove the old rubble, and substitute fresh. If any worms are seen pull them out. Examine the ball of earth closely to see that the water has in the past percolated every part of it. If it has not, pierce the ball in various parts with an iron pin in such a manner as not to injure the roots, and set it in a tub of water, leaving it there until thoroughly soaked through. Plants that require larger pots or tubs, of which we must judge by the quantity and condition of the roots, may be at once transferred to such. The new soil required to fill the outer circle of the larger pots should be pressed down firmly with the fingers or a stick, so that the outer circle of earth may be at once almost as solid as the inner circle.

Watering is a point of the very first importance. It is here that the dog is often starved, and, perhaps, as often surfeited. The ill name he has acquired is, I believe, in nine cases out of ten due to too much or too little water. A copious supply should be given during the flowering and growing seasons when real work is going on, but at other times great caution is needed. I am favourable to the practice of watering freely at long intervals as the plant becomes dry, rather than to the common practice of giving small doses at shorter intervals. The starved appearance, the yellow sickly leaves often met with, if not due to too poor a soil, are due to injudicious watering. Rain or pond water should be used in preference to any other, and water containing lime should be studiously avoided. The practised hand can tell when a plant wants water by rapping or lifting the pot, thus testing the condition of the soil by sound and weight; but by others, whether water is required or not may be pretty accurately judged of by the look of the plant, and by stirring the surface of the soil.

Either too much or too little water during the season of rest will cause the dropping of the flower-buds before expansion. These results, however, are not due to this cause alone, but to any fault of cultivation that induces debility. There are, too, some kinds which are naturally or constitutionally liable to this defect, and others the flowers of which expand with difficulty. The best advice I can give with regard to such is to have nothing to do with them, they are the surly dogs of the

pack, and there are plenty in the pack of equal beauty and more accommodating disposition.

Pruning is an important operation, and should be performed in spring just after the flowering season, but before the new growth commences. If the plants have been skilfully grown but little pruning is necessary, only just as much as will keep them in shape. It is not advisable to cut back into wood of more than one year's growth, as the dormant eyes on old wood do not readily push forth. They may, however, be stimulated to do so by the agency of ground heat; and under this head I would allude to and condemn the barbarous practice of cutting Camellia flowers with wood two years old adhering to the flowers for the sake of obtaining a long stalk. Scrubby, poverty-stricken, and misshapen plants are very apt to result from this practice.

It is well known that the Camellia as a pot plant grows slowly, and like most evergreens from temperate and cold climates it requires a lengthened period of rest. The first six months of the year are in this climate the natural period of flowering and growth; and during the second six months the plants should be kept in a state of comparative rest. During the season of growth we make the foliage and set the flowers; during the season of comparative rest we establish the quality of the flowers.

What gardeners term sporting is a characteristic of the Camellia. The Pæoniflora will often produce red and white flowers on the same plant. Press's Eclipse usually produces striped flowers, but occasionally a red or a creamy-white flower will appear. Many of the striped kinds will also produce at times self-coloured flowers.

When removing the plants from the open air in September, the flower-buds, if too numerous, should in part be removed.

The green fly occasionally attacks the Camellia, but is easily disposed of by tobacco smoke. The scale is a more troublesome though less common enemy. It may be removed by a brush. For the health as well as for the appearance of the plants they should be kept clean, and that useful domestic article known as soap is all that is required for the purpose. Syringing with soapsuds occasionally is an excellent plan, and if the suds pass to the roots it will benefit rather than injure them.

With regard to the best varieties of the Camellia opinions on this point will probably differ, according to whether the individual flower or the general decorative character of the plant is most valued. The Double White combines these qualities, but there are others which possess them singly. Many of the Anemone-flowered varieties are among the most valuable for decorative purposes, and they flower profusely and grow more rapidly, ultimately forming large umbrageous trees. The species known as reticulata is gorgeous as a conservatory plant, but the florist would likely pronounce the flowers loose and untidy in appearance. I shall, therefore, recommend a list of twenty-five varieties from each separate point of view.

As florists' flowers I select:—

Cup of Beauty	Jenny Lind
Vicomte de Nieulante	Storyii
Reine des Beautés	Mrs. Cope
Augustina Superba	Bealii
Princess Bacchiochi	Sarah Frost
Mrs. Abbey Wilder	Adriana
Saccoiana Nova	Rafia
Countess of Orkney	Ubertina
Souvenir d'Emile Defresne	M. D'Offoy
Alba plena	Dante
Fimbriata	Jubilee
Valtavaredo	Aulica
Imbricata	

As conservatory plants I should choose the following:—

Lavinia Maggi	Fimbriata
Marchioness of Exeter	Chandlerii
Comte Boutourlin	Imbricata
Countess of Derby	Elegans
Catherine Longhi	Conspicua
Lucrezia Gazzarrini	Donckelaeri
Queen Victoria	Reticulata
Prince Albert	Corallina
Duchesse d'Orléans	Formosa
Henri Favre	Picturata
Mathotiana	Eximia
Bonomiana	Monarch
Alba plena	

In conclusion permit me to reiterate the opinion, that the Camellia, far from deserving the ill name it has acquired, far from being a difficult subject to deal with, is one of the least expensive in its habits, and one of the most tractable in its nature to be met with in the whole range of flowering plants. But before venturing to deal with it, it is only reasonable that we should ascertain its nature and requirements. What can we expect if we persist in keeping the dog unduly shut up, or in feeding him on unsuitable or insufficient diet?—William Paul, *Paul's Nurseries, Waltham Cross.*

VINES' DEATH UNEXPLAINED—PERVERSITY OF PEARS—HEATED BORDER FOR EARLY VINERY.

"A Constant Reader's" Vines (see page 124), are planted outside and taken through the wall—has he looked to see if the rats have not barked them just where they enter the house? I had a young Vine or two served in that way last year; they did not push, but the others grew very well.

The Pear you named for me (Knight's Monarch) was grown against a south wall. I had 150 similar to the specimen sent, and I intend propagating the variety rather largely, as there are only a few late Pears which are really good here (Yorkshire). For instance, I cannot ripen well Beurré de Rance and Ne Plus Meuris, yet Knight's Monarch and Glou Morçeau are good. The vagaries of Pears are very strange. Out of about fifty varieties grown here there are not more than twelve really good. All my Pears and Apples are on walls, and so are the Plums. Can you give me a hint or two as to ripening the two Pears I have mentioned?—J. W. K.

[Were the stems outside the house sufficiently protected from the frost whilst the stems inside were being forced? We had several Vines once killed in this way, and we knew of a similar case near here this winter. There are many situations in which Beurré de Rance does not succeed well; we should, however, have thought that Ne Plus Meuris would have done well. It succeeds as an open standard in the London district. We can only suggest to you to expose your fruit well to the sun, and especially to allow all late Pears to hang as long as possible on the tree.—Eds.]

Was the dressing applied hot to "Constant Reader's" Vines, as sometimes men will heat the dressing to make it work better? It should never be applied hotter than it would become from being placed on a flue or on the pipes. Are the Vines more than one year old? as, if so, it would not be a case of unripened wood. I see nothing particularly objectionable in the dressing or in the boiling. I always boil my dressing, as it blends the materials so much better; but compounds, such as the Gishurst, are sometimes of uncertain strengths. The same remark applies to tobacco paper. I use homegrown tobacco stalks chopped fine and well boiled. For Gishurst compound I substitute soft soap, together with a little soot and lime, which mixture, if put on at a temperature of 50°, would never cause any mischief. I have applied it to the Vines in five houses, to Peach trees, Figs, &c., for several years without any ill effects. Was nothing more used in the dressing than the ingredients stated at page 124? as I have heard of nux-vomica, urine, and sugar of lead being used, and the mixture of these and other materials might produce an injurious chemical action.—F. P., *Gardener, Hillington.*

"Constant Reader" does not explain whether the dead Vines are alternately with the live ones in the house, or whether they are all at one end, nor does he say how the border is situated—a matter of much consequence in early forcing.

I started my first vinery on December 1st; it contains eight Vines, and five of them have made good, strong, short-jointed wood, shown plenty of bunches, and are now in full flower. Of the other three Vines which are situated at the cooler end of the house, the first, a Sweetwater, has made weak shoots, and has not shown a single bunch. The second is Trentham Black, and the third Black Hamburgh. The last two have not made nearly such good wood, and have not shown so many bunches, nor are the bunches so large. Besides, they are at least three weeks later than the other five Vines, owing to the coldness of the border; for the fireplace, which is underneath the house, goes as far under the border as the roots of the five Vines extend. This proves the benefit of having the border heated for early forcing; for not only the Vines are more forward, but the crop is better in quality and quantity in the part of the house where the border is heated. I am much in favour

of having constant heat in the border when Grapes are hanging late in the season, but the border, of course, must be dry and the temperature of the house cool, the atmosphere being also dry.

I have two Lady Downe's Vines in the second vinery, situated one at the end of the house where the fireplace of the first vinery is underneath, and the other about the middle of the house where no artificial heat reaches the border. The Grapes were ripened last July, but those on the Vine which is situated in the unheated part of the border have not kept nearly so well as the others, although the treatment was exactly the same in both cases. The Grapes on the Vine above the fireplace look as plump and as full of bloom as they did last August.

The cause of the death of "CONSTANT READER'S" Vines may be the lime contained in the dressing glueing up the buds, or the dressing being too strong (for he does not say how much water he used); or it may be starting the Vines so early with the border unheated and the canes weak, the rising sap being too weak to force the development of the buds.—W. JONES, *Bodlondeb, Bangor.*

GROUND LEVELLING AND PRACTICAL GARDEN PLOTTING.—No. 13.

DRAWING PLANS.

To draw and transfer *fig.* 36 to the ground, form the rectangle A B C D, also the diameter lines E F and G H. Draw lines 1 2, 15 16, 17 18, and 39 40, which form the inside rectangle. On the diameter line E F draw the two triangular beds. Draw lines *i k* and *m n*. On the diameter line G H draw the two squares at equal distances from centre o; draw the diagonal lines *a b*, *e d* on one side, and *e f*, *g h* on the other side; draw lines *r s*, *t u*, *v w*, *x y*, and corresponding lines on the other side. Between lines A D and B C draw lines 39 40, 37 38, &c.; between lines A B and C D draw lines 1 2, 3 4, &c.

To transfer the figure to the ground, the distance between points A and B is 55 feet. Insert a stake at each point. From point B to point C is 84 feet; insert a stake at point C. Line C D is equal to line A B; insert a stake at point D. Line D A is equal to line B C; lay a line from stake to stake. On each side of the stake at point A measure 5 feet (which is the width of the side walk), and insert pegs as at points 1 and 39. On each side of the stake at point B measure 5 feet, and insert pegs as at points 15 and 40. On each side of the stake at point C measure 5 feet, and insert pegs as at points 16 and 18. On each side of the stake at point D measure 5 feet, and insert pegs as at points 2 and 17. Lay lines from peg 1 to peg 2, and from peg 15 to 16, from 17 to 18, and from 39 to 40. Where the lines cross each other are the angles of the inside rectangle. Insert a stake at each point, as at points *r w*. On each side of the diameter line E F, on line 1 2, measure 5 feet, and insert a peg at each point, as at *l l*; from points *l l* measure 13 feet to line E F, and insert a peg as at point *z*. Find the corresponding triangle on line 15 16, insert a peg at each point, and lay lines from peg to peg. From the pegs at points *l l*, on the side lines of the triangle, measure 7 feet 3 inches; insert a peg at each point, as at points *c g*. Find the corresponding points *e b* on the corresponding triangle. From the peg at point *r*, on line *r w*, measure 3 feet, and insert a peg as at point *f*. Lay a line from peg *e* to peg *f* as shown. From the peg at point *w*, on line *w r*, measure 3 feet, and insert a peg as at point *h*. Lay a line from the peg at point *g* to the peg at point *h*; where these two lines cross each other is the centre of the square; insert a peg at that point. On each side of that peg, on lines *e f* and *g h*, measure 6 feet; insert a peg at each point, as in the small circles. Lay a line from peg to peg, and the square is lined. On each side of the diameter line E F—that is to say, from the stakes at points E F, measure 11 feet 6 inches, and insert pegs as at points *i n* and *m k*. Lay lines connecting pegs *i* and *k*, also pegs *m* and *n*. On each side of the diameter line E F measure 2 feet, and insert pegs as at points 27, 28, 29, and 30, and lay lines connecting them. On each side of the diagonal lines *e f* and *g h* measure 2 feet, and insert pegs as at points *r s*, *t u*, *v w*, and *x y*, and lay lines connecting them. Find the corresponding points on the other side, and lay the corresponding lines in the same manner. From the stake at point A, on line A D, measure 16 feet, and insert a peg as at point 37. From the stake at point B measure the same distance on line B C, and insert a peg as at point 38. From the stakes at points A and B measure 22 feet, and insert pegs as at points 35 and 36. From stakes A and B measure 26 feet, and insert pegs as at points 33 and 34. Again, from stakes A and B measure 32 feet, and insert pegs as at points 31 and 32. Find the corresponding points on the other side in the same manner. Lay lines connecting pegs 37 38, 35 36, 33 34, 31 32, and also corresponding lines on the other side. On each side of the diameter line G H—that is, on each side of the stakes at points G H, measure 2 feet, and insert pegs as at points 7 8 and 9 10. Again, on each side of the stakes at points G H measure 8 feet, and insert pegs as at points 3 4, 13 14. Lay connecting lines

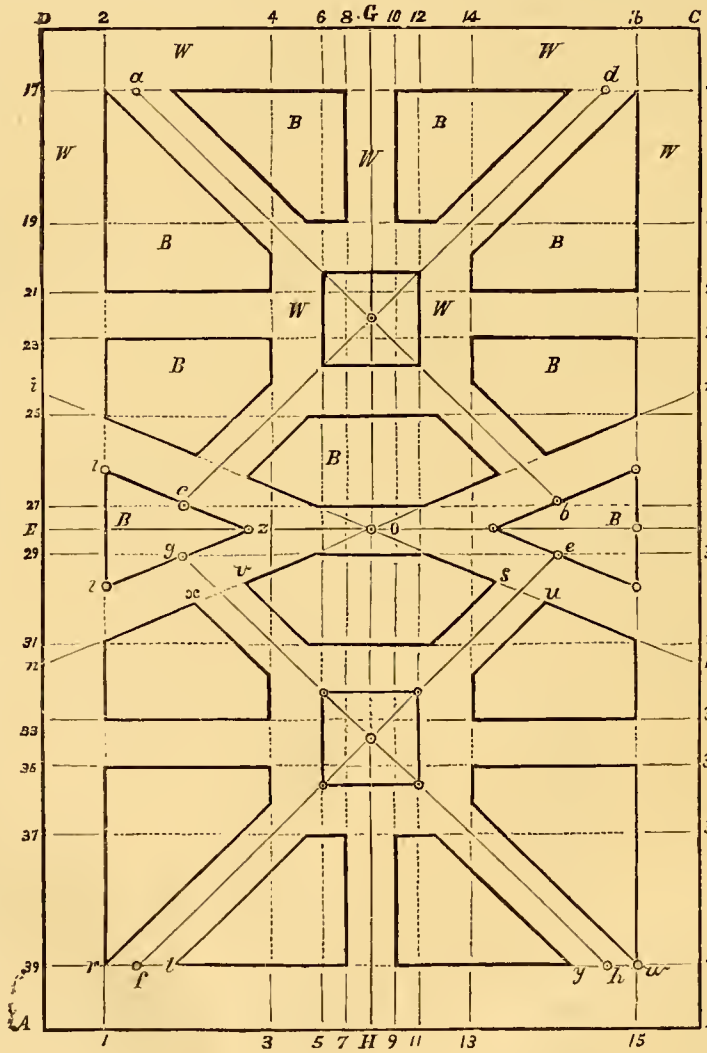


Fig. 36. Scale 16 feet to the inch.

between lines 7 8, 9 10, 3 4, 13 14, then all the lines are laid. The beds are intended to be edged with Box edging. The squares would answer well for vases. B, beds; w, walks.—M. O'Donnell, *Gardener to E. Leeming, Esq., Spring Grove, Richmond.*

FRENCH HORTICULTURISTS' RELIEF FUND.

A meeting was held yesterday, at the rooms of the Royal Horticultural Society, South Kensington, to consider the mode in which British horticulturists can best aid their suffering brethren in France, after the fearful hardships and devastation they have undergone through the war with Germany. Mr. G. F. Wilson, F.R.S., was in the chair, and there were present Mr. William Paul, Dr. Masters, Mr. Moore, Rev. H. H. Dombrain, Dr. Hogg, Mr. Standish, and Mr. Turner. Mr. Harry Veitch, Mr. Thomas Osborn, and Mr. Bull also took part in the movement, but were unable to be present at the meeting, The following resolutions were unanimously adopted:—

"1st, That it is desirable to make a subscription, and to solicit contributions in kind in aid of the French horticulturists who have been ruined or injured by the war.

"2nd, That a Committee be appointed to carry out this object, consisting of the gentlemen present at the meeting, with power to add to their number, and that the Rev. H. H. Dombrain be requested to act as Honorary Secretary."

We shall draw attention more at length next week to this desirable object, meanwhile directing our readers' notice to the fact, and strongly urging them to unite in making this laudable object a real success.

ROYAL HORTICULTURAL SOCIETY.

March 1st.

Fruit Committee.—G. F. Wilson, Esq., F.R.S. in the chair. Mr. James Batters, gardener to J. W. Fleming, Esq., of Chilworth Manor, Romsey, sent a very fine specimen of Queen Pine, weighing 4 lbs. The plant on which it was grown was twenty-two months old. It was much admired and received a special certificate. Mr. Douglas, gardener to F. Whitbourne, Esq., Loxford Hall, Ilford, sent a bunch of Mrs. Pince's Black Muscat, from a plant grafted on the Lady Downe's, and also a bunch of Lady Downe's from the stock plant. The fruit of Lady Downe's was of good colour and indifferent flavour, and Mrs. Pince was deficient in colour, but superior in flavour. Mr. Osman, gardener to H. Holland, Esq., Stanmore Hall, Middlesex, sent a dish of Loquat, the fruit of Eriobotrya japonica. The fruit was small but very highly ripened, and of excellent flavour, many of the members expressing an opinion that they were the best-flavoured examples of home-grown Loquat they had seen. A special certificate was awarded. M. Piccarillo, of Wigmore Street, sent cones of the thin-shelled Pinus Pinea, from Naples. The seeds of this variety have thin skin, and may be easily broken between the finger and thumb.

Mr. Cannell, of Woolwich, sent a model of a new boiler of his invention, and another was sent by Mr. G. Smith, gardener to Thomas Brassey, Esq., of Normanhurst Court, Battle, but the Committee decided that no opinion would be given upon any boiler a model, of which no practical experience had been obtained.

Prizes were offered for the best bunch of early Grapes, and for the best bunch of late Grapes. In the former class no first prize was awarded, the second went to Mr. Tribe, gardener to J. Sharpe, Esq., Waltham Cross, for Black Hamburgh. For late Grapes Mr. Sage, gardener to Earl Brownlow, Ashridge, was first with Alicante in very good condition, also showing Mrs. Pince a little shrivelled, not for competition. Mr. Bannerman, gardener to Lord Bagot, Blithfield, was second, with Lady Downe's, fine, also showing excellent bunches not for competition. Mr. Lynn, gardener to Lord Boston, was third with Alicante.

The first prize for the best dishes of Asparagus, Sea-kale, and Rhubarb went to Mr. Bray, gardener to E. Sandford, Esq., Nynehead Court, Wellington, for good samples of each. Mr. Miles, gardener to Lord Carrington, was second with fine Rhubarb, good Asparagus, but the Sea-kale coarse.

Floral Committee.—Mr. Denning, gardener to Lord Londesborough, sent a group of Orchids, among which were several fine specimens of Dendrobium nobile, one in particular being nearly 4 feet across, and a dense mass of blossom. Besides these there were Cattleya Trianæi, Cymbidium eburneum, Phalænopsis Schilleriana, Oncidium splendidum, conspicuous by its long spike of flowers, with a yellow lip 2 inches in diameter; O. leucochilum, and others; Odontoglossum cordatum in fine bloom, Pilumna fragrans, noticed in our report of the last Meeting, the pretty Dendrobium lasioglossum, D. capillipes with small orange yellow flowers, and Angræcum citratum. Mr. Denning also sent a very pretty unnamed Cheilanthes with finely-divided fronds.

From Mr. Williams came a varied and pretty group of Orchids, Palms, and other plants, in which were excellent specimens of Cypripedium villosum, Odontoglossums, Dendrochilum glumaceum, new hybrid berried Solanums, Iris reticulata, Cyclamens, Amaryllis, Camellias, the beautiful azure-flowered Tillandsia Lindeni, and other plants, together with a Trichopilia with white flowers, tinged with orange in the throat.

From the Society's garden came a fine plant of Dendrobium speciosum, and a new Lycaste, very free-flowering, and having drooping, dull fawn-coloured flowers, with an orange lip.

Messrs. Veitch, of Chelsea, sent a group containing fine specimens of Cypripedium villosum, Lycastes, Dendrochilum glumaceum, and other Orchids, together with Aucubas in berry, Pancratium fragrans, and Amaryllids; also Mormodes minax from Chiriqui, a rather showy new Orchid, purplish rose, with dark crimson spots and blotches, and the hybrid Lælia Pilcheri raised from L. Perinni and Cattleya crispa, the latter plant being shown in competition for Major Trevor Clarke's prize.

Messrs. Rollisson & Sons, of Tooting, sent a group in which were several Cypripediums of which C. villosum was very fine, Vandas, Phalænopsis Schilleriana, Dendrobium Wallichi, a variety of nobile, much finer than the latter in colour, Amaryllis, Palms, &c.

Mr. Lawrence, gardener to Bishop Sumner, Farnham Castle, sent Cattleya Trianæi Lawrenciana, a most splendid variety and beautifully flowered, also a fine specimen of Dendrobium Kingianum. Mr. Z. Stevens, gardener to the Duke of Sutherland, Trentham, exhibited several varieties of Azalea amœna. As shown, the plants had larger flowers and differed in the shades of colour, affording a pleasing variety. Mr. R. Dean, Ealing, sent Primula auriculæflora to show its merits as an early-flowering Primrose; and Mr. Knight, Floral Nursery, Hailsham, Princess Louise Victoria Hybrid Perpetual Rose, which is stated to be very free both in growth and flowering, and suitable as a climbing Rose.

Mr. Turner, Slough, exhibited a basket of Mr. Rutter Golden Tricolor Pelargonium, very fine. From Mr. Orchard, gardener to F. W. Harris, Esq., The Priory, Wimbledon, came seedling Violet Purple King, a cross between the Czar and the common Russian, having large, very sweet-scented flowers. Messrs. E. G. Henderson exhibited Eupatorium riparium, forming a plant 4 feet across, and bearing a profusion of charming heads of little button-like white flowers which would be extremely useful for bouquet-making. Mr. Ware, Hale Farm Nursery, Tottenham, exhibited two fine baskets of Sempervivum tabulæforme, the lively green saucers or platters which the plant resembles having a very good effect, also baskets of the charming little double Hepatica triloba rubra, pans of Scillas, a numerous and very beautiful collection of spring flowers, and a basket of variegated Ophiopogons. Mr. Moore, gardener to C. Leach, Esq., Clapham Park, sent a remarkably fine specimen of Dendrobium speciosum, and Mr. Pilcher, gardener to S. Rucker, Esq., Wandsworth, Masdevallia elephanticeps (?) with an extremely brilliant orange scarlet flower veined with deep scarlet. Odontoglossum Rossii, very fine, came from Messrs. Backhouse, of York, also Odontoglossum retusum-latro with rich orange blossoms. From Mr. Bull came Helcia sanguinolenta, and Odontoglossum Alexandræ with a fine spike.

Prizes were offered for the best six Camellias in pots, but there were no exhibitors. Messrs. Lane, however, sent a numerous collection, mostly small and well-bloomed plants. Prizes were likewise offered for cut blooms. The first prize went to Mr. Howard, gardener to J. Braud, Esq., Bedford Hill, Balham, who had fine examples of Fimbriata, Valtevaredo, Donckelaari, La Reine, Countess of Orkney, Chandleri elegans, Jubilee, Elegans, Alba plena, Aulica, and Imbricata. Mr. Baxter, gardener to C. Keiser, Esq., Broxbourne, was second, and Mr. A. Wilkie, Oak Lodge, Kensington, third. Mr. Trussler, gardener to D. J. Kay, Esq., Hoddesdon, also sent some good blooms. By far the finest exhibition, however, of Camellias was that from Mr. W. Paul, of Waltham Cross, who had no less than six large boxes of splendid cut blooms. Donckelaari, Alba plena, Corallina, and Imbricata each filled a box, and there were besides two stands containing a number of the best varieties.

Of shrubs in flower there was only one collection, coming from Mr. Wilkie, Oak Lodge, for which a second prize was awarded. It consisted of Rhododendrons, Azalea amœna, Lilac, &c.

Of Lily of the Valley the best six pots came from Mr. Howard, gardener to J. Braud, Esq., of Balham. These filled large pans, and formed a grand show. Mr. Searle, gardener to R. C. Steel, Esq., Hammersmith, was second, and Mr. Wilkie third.

First-class certificates were awarded to Mr. Denning, gardener to Lord Londesborough, for his new Fern, to Messrs. Backhouse for Odontoglossum retusum latro, to Mr. Turner for Tricolor Pelargonium Mr. Rutter, and to Mr. Pilcher for his Masdevallia.

Special certificates were awarded to Mr. Ware for his collection of plants; to Mr. Denning for his collection of Orchids, also for Dendrobium nobile and Oncidium splendidum; to Messrs. Veitch for a collection of plants; to Messrs. Lane for Camellias in pots; to Messrs. Rollisson for a group of plants, and for Cypripedium villosum; to Mr. Trussler for cut Camellias; to Mr. Moore for Dendrobium speciosum; to Mr. W. Paul for cut Camellias; to Mr. Williams for a miscellaneous group; to Mr. Lawrence for Dendrobium Kingianum and Cattleya Trianæi Lawrenciana; also for Dendrobium speciosum from the Society's garden.

General Meeting.—Major R. Trevor Clarke in the chair. After the election of thirty-one new Fellows the Chairman said Mr. Bateman would make some remarks on the losses of our French horticultural brethren.

Mr. Bateman said he would first make a few observations on the Orchids. The Masdevallias were eminently cool Orchids, as they grew on the limits of perpetual snow; they were also eminently mimetic Orchids, and one known to us only by drawings was M. elephanticeps, so named from its flowers bearing some resemblance to an elephant's head. The plant shown under that name was, however, probably only a variety of M. coccinea, and therefore M. elephanticeps was still a desideratum. The fine specimen of Odontoglossum Rossii from Messrs. Backhouse was next noticed, also the specimen of Oncidium retusum latro which was not only curious in the colour of its flowers, which was similar to that of Epidendrum vitellinum, but had also a curious trick of pushing, but never coming to the point of flowering. Notwithstanding every effort had been made in the Society's gardens it had obstinately refused to do so, but Messrs. Backhouse had succeeded; and no doubt in the future, when the bulbs gained strength, the spike would be of much greater length. The beautiful Cattleya from Bishop Somner's gardener, Angræcum citrinum, and some other Orchids having been briefly noticed, attention was next directed to a Berberis which a few days ago had formed a splendid golden corona in one of the houses at Kensington, and it was remarked that if it were desired to form it into a handsome plant, it was only necessary to keep its head cut off.

Mr. Bateman said he now begged to call attention to the serious losses French horticulturists had sustained in the war, and after drawing a picture of what would be the results to the nurserymen and market gardeners round London if a similar zone were trampled on by contending armies to that which has been the field of operations round Paris, said a Committee had been formed to aid French horticulturists. The Council, with the Fellows' permission, would, in addition, hand over any surplus seeds. The valuable Orchids at the Jardin des Plantes had been literally pulverised, but the Society would send any duplicates they possessed; Kew would assist; but still he urged those who had plants to spare to do the same. It would only be necessary to send to the Society the names of such plants in the first instance, and for himself he expressed his confidence that English horticulturists would contribute something handsome for their suffering brethren in France. In addition, a bazaar would be held in the gardens the week after Easter under the patronage of the Princess of Teck, the Duchess of Argyll, and others, and he invited contributions of articles, and especially of bonquets.

The Rev. M. J. Berkeley said, that after a careful examination, the Gastronema shown by Mr. Bull at the last meeting, appeared to be only a variety of G. sanguineum, or Cyrtanthus sanguineus, of the "Botanical Magazine," *t.* 5218. Mr. Ware's beautiful collection of spring flowers was next noticed, and especially the true Leucojum vernum which it contained, and in connection with it the early-flowering Crocus Imperatenius, to which the Chairman had drawn attention last year. A Wigandia in a diseased state, from Messrs. Henderson, Mr. Berkeley said, appeared to be affected with precisely the same disease as that which is so fatal to Verbenas, and the cause of this was ascribed to an unsatisfactory condition at the roots, for, on turning the Wigandia out of its pot, these were found to be in a bad state.

Mr. Berkeley then read a paper which had been communicated to the Agri-Horticultural Society of India last December, descriptive of a mode of rendering the Litchi stoneless by scooping out the pith and afterwards inarching, by which means, after each operation, the stone became less and less. Dr. Hogg had informed him this was by no means a new idea, for a similar method was mentioned in one of the old authors, but he (Mr. Berkeley) confessed himself incredulous of the success of the process, and on grounds which he stated.

The Chairman then made some remarks on the prizes which he had offered to the exhibitors gaining the greatest number of marks for subjects illustrative of the phenomena of hybridisation, and said, as soon as he could arrive at a definite conclusion as to the best manner in which they could be competed for, he would make the result known in the horticultural journals.

A Meeting was held on the same day as the above, to consider Mr. Marshall's new exhibition scheme (see pages 49 and 122). Mr. Marshall was in the chair, and after inviting suggestions, and there being a short discussion on the details, he proposed that the conditions should be printed and circulated among exhibitors, and opinions invited. Dr. Hogg said, as all seemed agreed on general principles and the only differences were on matters of detail, he would propose that a Committee be appointed to confer with the Council. He would not advise a large Committee. The Chairman invited him to name the members, to which Dr. Hogg demurred, but eventually the following were nominated—viz., Messrs. Baines, W. Paul, Williams, Moore, Turner, Fraser, Ward, and Dr. Hogg. It was then agreed that the proposed regulations should be printed and sent out, to be returned to the Committee previous to the next meeting, March 15th.

Additional Prizes.—G. W. Ricketts, Esq., offers first and second prizes of 20*s.* and 10*s.* respectively for two erect-flowered and two drooping-flowered Gloxinias, to be competed for on May 17th, also for Carnations.

LEAF-COLOURS IN AUTUMN.

A paper on the colours of autumnal foliage by Mr. H. C. Sorby, appears in the last number of the *Quarterly Journal of Science*. The chemical substances which give rise to the varying tints of autumn he divides into five classes or genera:—1. *Chlorophyll*, or the green colouring matter, which is very rarely found pure, even in fresh leaves. It is insoluble in water, but soluble in alcohol or bisulphide of carbon, and the spectrum has a well marked absorption band in the red. 2. *Xanthophyll*, or the yellow colouring matter; this is insoluble in water, but soluble in alcohol and bisulphide of carbon: the spectrum shows absorption at the blue end. It is found in various fruits, flowers, and roots. 3. *Erythrophyll*, or the red colouring matter. There is a strong absorption in the green part of the spectrum; the various kinds are usually soluble in water and dilute alcohol, but not in bisulphide of carbon. It is found in red flowers and leaves. 4. *Chrysophyll*, or the golden yellow colours, soluble in water and diluted alcohol, but insoluble in bisulphide of carbon. 5. *Phaiophyll*, or the group of various browns, soluble in water, but not in bisulphide of carbon. These are mostly due to the oxidation of chrysophyll. Unfaded green leaves are coloured mainly by chlorophyll, but the tint is very much modified by xanthophyll and by colours of the chrysophyll group. The various tints of autumnal foliage are produced by combinations of different members of the above groups; and Mr. Sorby gives the following scheme of their relative abundance:—During complete vitality and growth, we have different kinds of chlorophyll and chrysophyll producing more or less bright green; during low vitality and change, erythrophyll and xanthophyll make their appearance, producing more or less green-brown, red-scarlet, or bright orange-brown; while during death and decomposition phaiophyll and humus (brown-black) usurp their places, and gradually cause a uniform dull brown colour.—(*English Mechanic and World of Science.*)

THE FROSTS versus VEGETATION.

Mr. Ronson having asked for information (page 88) as to the effects on vegetation of the late severe weather, I am induced to offer a few particulars. For many miles in extent round here exposed culinary vegetables have in most cases suffered severely, and with me, such as Savoys, Kales, and Brussels Sprouts, are materially injured, infinitely more so than the same kinds were by the memorable severe weather of 1859-60. Broccolis and young Cabbage plants are completely destroyed; the latter, however, would doubtless have escaped injury but for an insufficient covering of snow, which, by the way, appears to have fallen more sparingly in South Warwickshire than in many parts, especially in the south of England.

Here I may remark that the importance of protecting frozen plants from the adverse influence of bright sunlight, has been forcibly exemplified by an instance that lately presented itself to my notice, in the shape of several hundreds of young Cauliflower plants pricked out under large hand-lights, and which, inadvertently, had been afforded no other protection from the alternating frosts and sudden thaws, in consequence of which every plant is *hors de combat;* whereas, had some slight covering been thrown over them, even after they had been considerably frozen, prior to the thaw, I believe the majority of them would have been saved, if I may argue from the result of the practice I fortunately adopted in protecting those I have under my own charge.

I hear sad accounts on all sides of injury to stored roots, such as Potatoes and Mangold Wurzel, and to Apples, where sufficient protective means were not, or could not be afforded. Evergreen shrubs and trees, however, appear to have sustained comparatively little injury in the grounds here, except in two or three cases; fully-exposed Laurustinus is materially injured. The lowest reading of Negretti's registering thermometer was 30° below freezing on the morning of the 31st of December, and I learn that 4° below zero was registered about five miles from here in a low-lying vale, where at all times during frosty weather a lower temperature is registered than with us.

The following are the readings of my thermometer from December 23rd to January 1st. It is fixed in an open part of the garden, and at 4 feet from the ground.

Dec. 23rd,	19°	below freezing point.	Dec. 28th,	7°	below freezing point.
,, 24th,	23°	,, ,,	,, 29th,	5°	,, ,,
,, 25th,	26°	,, ,,	,, 30th,	25°	,, ,,
,, 26th,	5°	,, ,,	,, 31st,	30°	,, ,,
,, 27th,	15°	,, ,,	Jan. 1st,	24°	,, ,,

—W. Gardiner, *Lower Eatington Park Gardens, Stratford-on-Avon.*

STONE FRUIT FAR NORTH.

I was not aware till lately that you wished to have a report of the stone fruit grown here. My experience is so limited that my contribution, I am afraid, will compare very unfavourably with those of most of your correspondents; yet it may prove useful to north-country growers whom I am very anxious to encourage.

A south wall here, fronting one point east of south, and built in compartments of brick and of stone alternately, 9 feet

in height, and extending 48 yards in length, had been planted upwards of twenty years ago with six trees, allowing 8 yards for each tree. These were selected, I believe, from the Horticultural Society's "Fruit Catalogue," and were very successful. The Peaches intended to ripen in succession were Acton Scot, English Bellegarde, Noblesse, and Royal George. They gave an excellent succession from about the earliest season that it is possible to have Peaches on the open wall in this county until the latest period at which the Peach will be found to possess its usual high flavour. In October this ceases to be the case, and it is better to rely on Plums as a dessert stone fruit for that month than to endeavour to prolong the supply of Peaches. The Acton Scot bore well, and was of excellent quality, ripening about the 10th of August, but the tree is small, and the fruit medium-sized. We now expect that the Early York will supersede it. The Bellegarde, on the contrary, was a robust-growing, large tree, and bore most wonderful crops of from forty to sixty dozen, and one year produced eighty-five dozen. After some years of this heavy cropping, the trees were injured by a very severe frost, and we have now a succession of young trees taking their place. Amongst these the French Bellegarde, a beautiful dark-coloured fruit, promises to ripen well. The Noblesse bore and ripened well; nothing can exceed it in quality. We have now a smallish white Peach, sent as a Noblesse (which it is not), that is delicious. Royal George has long been the favourite Peach in this county, but it should be known that it is the latest variety that will succeed here, and that many sorts are at least one month earlier.

Our Nectarine was and is the Elruge. It is small, but bears very well, and ripens freely. Hardwicke Seedling is a larger and earlier fruit, but, excepting in a very fine season like last summer, when we had great heat, it is inferior. Violette Hâtive has not yet had time to prove itself.

Our Apricot was Moorpark, a delicious fruit. We have also grown Hemskerk, equally good, but smaller, and not so free a bearer. We have grown Breda, which here is quite inferior. I have seen some prodigious crops of Apricots in this neighbourhood: 125 dozen were gathered from a tree in the garden of the clergyman of this parish; but no variety that we have met with equals the Moorpark.

I have yet to state that some of our trees are on brick and some on stone walls, and some are planted so that one half of the tree is trained on brick and the other half on stone, but we have failed to detect either the blossom or the fruit being ever earlier on the brick wall than on the stone wall; that such should be considered to be the case appears, therefore, to be a delusion.

A good October Plum, to hang on the wall till November, is a desideratum. Coe's Golden Drop is apt to fall off when of the size of a small bean. Autumn Gage, a great bearer, is insipid. A white Quetsche is too early, and a dark one is inferior. Blue Impératrice promises well. Late Orleans has been considered our best October Plum. At Gordonstown, near here, the baronial residence of Sir W. Gordon Cumming, Bart., there is a large tree of this variety on a south wall, and for many years past it has not failed to produce an abundant crop of fine fruit lasting all the month of October.

Of Cherries, May Duke is a great and constant bearer; although early, it hangs long (under a net) on the tree. It succeeds much better on the wall than as a standard, but it bears and ripens freely on a north wall, as at Cullen House, the seat of the Earl of Seafield. We have some new earlier varieties, such as Belle d'Orléans, but we have not yet sufficient knowledge of them. The common White Heart Cherry of this country, of which there are large standard trees in almost all the old gardens, is a most delicious fruit. We have also a Bigarreau Cherry quite common and quite hardy. Next to these, or perhaps exceeding them in importance, is the Hungarian Gean, of which there is both a black and a red variety, bearing annually by thousands. An English gentleman, who was here two years since, was so charmed with them that he ordered ten trees from Mr. Grigor, Nurseryman, of Forres, who carefully propagates this variety. At Sea Park, the residence of Captain E. Dunbar Dunbar, where there are some large trees, the fruit annually is something wonderful to behold.

We protect all our stone fruit from frost, which, perhaps, is not very severe, owing to the proximity to the sea, by laying posts, with the butt end on the ground, about a yard from the wall, and the upper end resting against the top of the wall, They are put all along the wall, at about 4 feet apart, and a herring net, with meshes about an inch square, is put on double along the whole, and reaching from the top to within a yard of the ground. It is put on as soon as the blossom expands, and is left until the fruit are the size of large peas. Old herring nets are very abundant and cheap here.

Figs ripen well during August and September. A variety that has been for many years in this garden has been proved to be the same as the Brown Ischia, obtained for us from Chiswick by a Fellow of the Royal Horticultural Society. There is grown in the neighbourhood a larger sort, of a very dark colour, and equally good.

At Grant Lodge, near Elgin, the residence of the Countess of Seafield, I have seen a standard Mulberry tree completely laden with ripe fruit; in several gardens in this county such trees have been tried without success. When trained on the wall, continual application of the knife must be avoided. The shelter from the north wind, that rendered the trees at Grant Lodge so successful, has now been partly removed; but it is on record that a Mulberry, as a standard, where well sheltered from the north, with a good southern exposure, would be nothing new in our gardens.

Perhaps I should mention that we have Rivers's Early Favourite Plum and July Green Gage on a south wall, to succeed the Cherries and to precede the Peaches. We trust to standards for midseason Plums, as mentioned in a former notice.—JOHN MACCULLOCH, *The Gardens, Duffus, Elgin.*

SLOW COMBUSTION AND ECONOMY OF FUEL.

IT will interest many of your readers who have small houses under their own supervision, and to whom cheapness of fuel and a minimum amount of attendance are desirable, to know something about the firing burnt in this part of Wales. It amused me much when I saw it first. I allude to the Welsh "balls," as they are called. They are made of the small parts, or dust, of the anthracite coal of which "R. S." speaks so highly (see page 26). I can thoroughly endorse all he has said in its favour; and he is quite right in suggesting that the fireplace should contract from the top to the bottom, and the door should be different from that usually employed.

Now, the balls are far more economical than the fuel that "R. S." uses, and so slow is the combustion, that a fire can be made to keep in for from six to twenty-six hours by using different quantities of clay. This varies in colour, but that of a dun colour is the best, and it is found in low-lying ground at the depth of from 1 to 3 or 4 feet from the surface; this generally, but not always, being a black bog, 4 to 6 feet deep, and resting on a rough gravelly bottom. It is quite impervious to water, and scarcely any grit is to be found in it. It costs from 3*s.* to 4*s.* per good cartload, and can be kept in store for any length of time, if placed under cover. I should like to know if it can be obtained in England.

I will now suppose that the clay and coal are ready, and if under cover so much the better, for the materials can be made up in wet weather as is generally done here. The coal is sifted and put round to form a basin, precisely the same as a mason would do in making mortar. The clay is then placed in the middle, in the proportion of from one-eighth to a thirteenth part of the coal, according to the time the fuel is wanted to burn; the more clay, the more quickly it will burn. One-tenth is the proportion generally used here. The clay is chopped up fine, sufficient water is thrown on to make the heap of the consistency of mortar, and the whole is mixed together, well kneading it, by turning and treading, until the clay is thoroughly mixed with the culm. It is always best to use this fuel wet. When it is used in the house, as every person does, it is worked into balls and put on the fire, being about the size of a goose's egg, with the riddlings, if any, under them. When the fire is banked up for the night, a few balls are put under with a plaster 2 or 3 inches deep over them, and a hole is made in the top as a vent. We never hear of lighting a fire in this part—in fact, it would be as great a novelty to see a lucifer match in a cottage as a piece of roast beef on a Sunday.

There are other clays used when that which I have noticed cannot be had; one is a white clay similar to pipe clay, but not nearly so good, and three times as much of it are required. Those living near a river that deposits slimy mud on its sides, use that as a substitute. "A. B." (page 67) will find that these clays will be a great addition to his small coal and cinders, of which we have used many loads this winter, and if he could add a third part of small hard coal, the mixture would last much longer, and burn with greater certainty. The same ob-

jection applies to the anthracite coal and the balls as that which "A. B." makes to his small coal and cinders, for one must have wood or soft coal to "set the fire going;" if it is desirable to put on a fire in a cold morning, it will not be forced. The stoker must wait patiently after he has lighted the fire for it to burn up of its own accord, if poked it will not burn.]

As regards price, I think the fuel described will exhibit a favourable contrast to soft coal; we buy the coal at 6*s.* a-ton, and the clay and making cost 2*s.* per load. This is the extreme price here for making it. It is considered that one load of the "balls" will last as long as three loads of soft coal, the price of which is from 12*s.* to 14*s.* per ton. The small amount of ashes which come from the balls is a great advantage in a small stoke-hole; they partake of the character of burnt brick, and are an excellent material for applying to heavy land. There is no danger of sparks, and the annoyance of much smoke is avoided, for the cottages here have their chimneys of the shape of a small round hamper with the bottom out, rising about a foot above the thatch, and having a little mortar round it to keep it on; but I never heard of any disaster from fire.—J. T., *Maesgwynne, Carmarthenshire.*

SOLANUM CILIATUM.

THIS highly-ornamental species has been reintroduced by Messrs. Carter & Co., nurserymen and seedsmen, High Holborn, from Porto Rico. It was cultivated here fifty years since, and was portraited as long ago as 1813, by Dunal, in his "Histoire Naturelle des Solanum, &c."

It is either an annual, or has to be cultivated as if it were

Solanum ciliatum.

so, by being sown yearly. Its stem is herbaceous, from 12 to 18 inches high, having numerous yellow prickles; leaves subcordate, sinuately lobed, ciliated (hence its specific name) with prickles on their ribs; leaf-stalks short; flowers white, five-lobed; berries nearly spherical, more than an inch in diameter, orange-scarlet when ripe. These render it highly ornamental,

clustered among the dark green foliage, and especially fit it, being a dwarf plant, for table decoration.

THE WAR AND FRENCH GARDENING.

A week or two ago we gave an extract from a letter to Dr. Hogg, from Mr. Henry Vilmorin, of Paris, in which he mentioned his two brothers, Maurice and Phillipe, as being drafted into the army, and serving with the Mobiles. Those of our readers who know the family will be grieved to hear that Phillipe, the youngest of the Vilmorin family, and a fine noble lad of eighteen, has fallen a sacrifice for his country in the great struggle against the Germans. He was shot through the head at Commeré, near Le Mans, in January last, while courageously leading his company into action. M. Henry and M. Maurice Vilmorin have escaped unhurt.

The following description of the effects on the Jardin des Plantes of the bombardment of Paris is from "A Special Correspondent" of the *Times*:—

We drove through the usual gay and cheerful-looking throngs along the Quais to the Jardin, but here all was changed. The iron gates were shut, and the usually animated scene was desolate in the extreme. So we drove round to the house of M. Decaisne, whose celebrity as a botanist is too well known for any further comment to be necessary, and under his most kind and interesting guidance I visited a scene which was full of painful interest.

The gardens had apparently been a point of especial bombardment, and no fewer than eighty-three shells had fallen within their comparatively limited area. We went out to the glass houses to judge for ourselves of the effects. On the night of the 8th and 9th of January four shells fell into the glass houses and shattered the greater part of them to atoms. A heap of glass fragments lying hard by testified to the destruction, but the effect of the shells was actually to pulverise the glass, so that it fell almost like dust over the gardens. The consequence was that nearly the whole of this most rare and valuable collection was exposed to one of the coldest nights of the year, and whole families of plants were killed by the frost. Some of the pants suffered the most singular effects from the concussion; the fibres were stripped bare, and the bark peeled off in many instances. One house into which we went presented a most lamentable appearance of bare poles; scarcely a leaf was left. All the Orchids, all the Clusiaceæ, the Cyclantheæ, the Pandaneæ, were completely destroyed, either by the shells themselves or by the effects of the cold. The large Palm house was destroyed, and the tender tropical contents were exposed to that bitterly cold night; yet, singularly enough, although they have suffered severely, not one has yet died. Imagine Kew Gardens under a heavy fire, and Dr. Hooker standing disconsolate in the midst of them, his most cherished plants in ribands, and his glass houses a mass of powder, and we can form some idea of what M. Decaisne suffered during those fifteen nights, when shells came bursting under his window, sending splinters into his flower garden, and shaking his house to its foundations with every explosion. Feeling that, at all costs, he was bound to stick to his post, he passed the whole of his time actively engaged in covering up his plants in blankets, and straining every nerve to keep the cherished favourites of a lifetime from the ruthless missiles that were searching every nook and corner of the establishment. Two shells fell into the zoological gallery, one into the gallery of mineralogy, where it destroyed some beautiful pieces of palæontology. Three fell into the laboratories and museum, destroying a valuable collection of rare shells, which had just been classified. A long building had been turned into a hospital, and a shell had burst in it, blowing out every window, and crashing through the wooden wall; fortunately, all the beds were unprepared, the patients had not arrived, and no lives were lost. A sick man in an adjoining hospital was less fortunate, and was killed in his bed by a shell. The houses, historical as having been the residences of Cuvier and Buffon, did not escape, but fortunately, although several of the shells were found to be full of combustible materials, nothing was set on fire. All through the whole of the fortnight during which these gardens were subjected to this rain of shells, Messrs. Decaisne, Chevreuil, and Edwards remained at their post, unable to rest, and have since, at their own expense, repaired the damage done, trusting that whatever form of government France may choose it will not repudiate its debts of honour. The British public have nobly come forward to relieve the distress of the suffering population of Paris; I would now make an appeal to the comparatively small section of society whose glass houses may, perhaps, be supplied with plants which may replace those which have been destroyed. M. Decaisne is making out a list of his losses, a large proportion of which might possibly be supplied from Kew, while owners of private collections might also be glad to testify their sympathy and interest in the cause of science by contributing whatever they may be able to spare as soon as the amount and nature of the loss is ascertained. I feel no doubt that it will be enough to make the facts known, for the British public to respond with the same generosity which they have manifested in other instances.

The animals fared better than the plants—not only have none of them been eaten by the population of Paris, as the latter fondly suppose, but although several shells burst among them they have escaped uninjured. Of course, when food was so scarce for human beings, the monkeys and their companions were put upon short allowance. This fact, coupled with the extreme rigour of the season, increased the rate of mortality among them, and one elephant died, but was not eaten. The two elephants and the camel that were eaten belonged to the Jardin d'Acclimatation, and had been removed in the early stage of the siege from their ordinary home in the Bois de Bologne, for safety, to the Jardin des Plantes, where, however, it would appear, it was not to be found. The birds screamed and the animals cowered, as the shells came rushing overhead and bursting near them, as they do when some terrific storm frightens them; latterly they seemed to become used to it; fortunately the part of the garden which they inhabit is somewhat removed from the museums, at which the fire seemed more especially directed. The gates of this favourite resort were kept closed, because the price of firewood is so high and the scarcity of it such that the people are unable to resist the temptation of coming into the garden in search of fuel, and for the present it is found wise to shut them out; indeed, so much greater is the necessity for fuel than for food at present that the provision trains have been stopped by order of the Government to allow the coal trains to pass.

NOTES AND GLEANINGS.

At a meeting of the Committee of the Seed Trade, held at Anderton's Hotel, on February 22nd, Dr. Maxwell T. Masters in the chair, it was decided that a memorial should be forwarded to the Postmaster-General containing the following resolutions:—

"1. That for several years previous to October 1st, 1870, seedsmen had the privilege of sending by post small parcels of seeds and other articles under the then existing arrangements of the sample post, these parcels being generally so small in size as to be in much danger of being lost in the course of transit by rail, or other modes of public conveyance.

"2. That this privilege was a great boon both to the buyer and seller of seed, the seller being in the habit of sending to all parts of the United Kingdom and abroad many hundreds of such parcels annually. That to purchasers residing at remote distances from railway stations, or in places destitute of the ordinary means of transit, this privilege was one of the greatest importance, as parcels could be obtained through the post, safely, expeditiously, and cheaply, owing to the superior organisation of the Post Office mode of transit. That the enjoyment of this privilege tended in a great degree to develope an important branch of the industry of the kingdom—that of the production of seeds.

"3. That the postal arrangements now in operation interfere most injuriously with the transmission of seeds through the post; as purchasers residing in all parts of the United Kingdom, the Colonies, India, the United States of America, &c., are no longer able to receive such packages by post, unless paid for at letter rates, which are simply prohibitory, inasmuch as the cost of transit by this means would be equal to at least 20 or 25 per cent. of the average value of the seeds so forwarded. In this manner a considerable loss is entailed on the retail seed trade, as many of the persons engaged in selling seeds have gone to considerable expense to meet this particular requirement of the public—namely, that of obtaining certain seeds, delivered at a nominal rate, promptly and safely. That so expensive are the means of transit, otherwise than through the post, and so much danger is there of loss or delay, that were it not for the facilities offered by the Post Office, there is much reason to believe such purchases would not be made.

"4. That this Committee beg leave to advocate the establishment of a 'Parcels' Post,' by means of which there could be forwarded through the Post Office seeds, or other goods, in execution of an order. That such a parcels' post as that advocated by this Committee is in operation in other countries, and is found to be of great general convenience, and that the establishment of such a system in this country would prove a great boon, not only to the particular trade represented by the Committee and their customers, but also to other trades who have been great sufferers from the restrictions at present in force. That the transmission of parcels so sent might be subjected to certain restrictions as to weight and dimensions, and that the postal authorities might reserve to themselves the right to examine the contents of such parcels if deemed expedient to do so.

"5. That such a parcels' post is advocated by the Committee of the Seed Trade, not only because it would remove the numerous objections urged against the present postal restrictions, but also because it would tend to prevent any evasion of the regulations laid down by the Post Office authorities."

It is also resolved that a deputation from this Committee be appointed to wait on the Postmaster General, in conjunction with a deputation from the Manchester Trade Association.

WORK FOR THE WEEK.

KITCHEN GARDEN.

Should the weather prove fine and the ground be found in a condition for sowing (when it crumbles beneath the foot it may be said to be so), the sowings of the principal crops may

be made. Make new plantations of *Artichokes*, and fill-up old ones. Sow Mazagan *Beans* in sheltered situations, and transplant those in the forcing house. *Beet* may now be sown. Sow *Red Cabbage* for autumn use. Sow a crop of *Carrots* out of doors, and thin-out those in frames. *Horseradish* should be planted, if there is not sufficient in already. Sow *Leeks* for the main crop. Sow *Lettuces*, and harden-off those in frames, to be planted out as soon as it can be done with safety. Stick early *Peas*, and sow several varieties for succession crops. Early *Potatoes* should be planted without delay. Sow *Parsnips* in drills a foot apart for the main crop. Sow a little *Savoy*, *Green Kale*, *Brussels Sprouts*, *Broccoli*, *Parsley*, and *Radishes*; and *Small Salads* must not be forgotten. Sow a few more rows of *Spinach* and Early Dutch *Turnips* in a warm situation.

FRUIT GARDEN.

Where circumstances have retarded the operations belonging to the orchard and fruit trees generally, no further time should be allowed to elapse. The application of fresh soil, pruning, nailing, and cleaning should each be completed with all reasonable dispatch. It is now time to look out for the opening blossom, and be ready on the first emergency to afford protection. Woollen netting, stout straw ropes stretched upon poles, or light frames covered with oiled calico, are amongst the available materials for the purpose. For the destruction of the Gooseberry caterpillar, now is a good time to rake away the earth from the stems of Gooseberry and Currant trees, and to dress them with soot and wood ashes, returning the earth as soon as that is performed. Prevention is better than cure, and this will save much hand-picking by-and-by.

FLOWER GARDEN.

The climate of England is, without doubt, the most favourable for the production of beautiful and verdant lawns, yet though we are assisted by climate in beautifying our flower gardens with a rich and verdant lawn, all efforts of ours will be comparatively futile unless proper attention be paid to the preparation of the ground. Of the two modes pursued in the formation of grass lawns, I am in favour of forming them by sowing a selection of Grasses, choosing those which are of a short and close growth. Sowing is done more expeditiously and economically than laying down turf, and in after years there will be no annoyances in the shape of Daisies, Dandelion, Sorrel, Hawkweed, &c. This is a good time for preparing ground for the purpose. Dig it carefully over, pick out all roots of perennial weeds, rake the surface, and bring it to the level required. Give it a good treading, and then roll it with a heavy roller to bring the ground to a regular and uniform consistency. Having done this, slightly stir the ground with the rake, sow the seed, and finally pass the roller over the surface. For a selection of Grasses suitable for this purpose, and the quantity necessary for an acre, I would recommend the following sorts for light soils:—Festuca tenuifolia, 2 pecks; Poa pratensis, 2 pecks; Anthoxanthum odoratum, 3 pecks; Lolium perenne tenue, 2 pecks; Agrostis stolonifera, 2 pecks; White Dutch Clover, 1 peck. For very strong heavy soil—Poa trivialis, 2 pecks; Festuca duriuscula, 2 pecks; F. ovina, 2 pecks; Anthoxanthum odoratum, 2 pecks; Cynosurus cristatus, 2 pecks; Alopecurus pratensis, 2 pecks; White Dutch Clover, 1 peck. When turf is in a bad state and difficult to mow in summer, let it be top-dressed with light soil, and some Clover seed sown upon it. Proceed with all operations that involve the necessity of wheeling or removing earth. Complete all planting, roll and sweep lawns, cleanse and turn gravel walks. Where it is necessary to eradicate weeds there is nothing like hand labour. In completing the arrangement of the flower garden, duplicate herbaceous plants may, perhaps, be found; these can be distributed about the pleasure grounds often with excellent effect. Prick-over flower beds, and get them in a wholesome state to receive the delicate plants intended for them. Prune Roses generally, and dress the beds with rotten dung. All trained trees and plants should receive attention. March winds are often destructive when the precaution of renewing old stakes and strings, rotted by the damp of winter, is neglected. Have soil and pots in readiness for potting Carnations, for which mix three parts of good turfy loam, two parts of well-rotted cow dung, and one part of rough sand and charcoal, and remove this compost into the potting-shed. The beds in which the choice varieties of Tulips are growing should be protected from heavy rains and frost; mats or thick canvas are proper materials for this purpose. The covering must be removed as the weather permits, otherwise the foliage becomes weakly and the stems drawn-up. By giving abundance of air the pillars gain sufficient strength to support the flowers without the assistance of sticks. Ranunculus seed, which ought to be sown now, should be carefully shaded from drenching rains. If covered with clean damp moss it prevents the surface from becoming dry and hastens the germination of the seed. Auricula seed should be sown in pans, making small ridges transversely on which the seed may be deposited. By watering between these the risk of the young plants damping-off is to a great extent avoided.

GREENHOUSE AND CONSERVATORY.

All the specimen plants in these houses should be carefully examined to see that the roots are in a proper state with regard to moisture, and the drainage clear. If you have the slightest suspicion that the interior of the ball of earth is in any case dry probe it immediately with a sharp-pointed quarter-inch iron rod, and give it a good soaking of water from the surface. To make assurance doubly sure, place the pot in a large saucer of water for twelve or twenty-four hours. After the severe weather we have lately experienced, and the extra fire heat used in consequence, many plants which will appear all right, are, nevertheless, very dry, and if they are not looked to in time the March winds will probably leave them dead or dying, when you little expect them to meet such a fate. Potting greenhouse plants should be commenced, not completed, at this time. Plants supplied with food in proportion to their progress thrive better than when over-potted. Ericas must be top-dressed or repotted. Tropæolums will require attention. Specimen plants of Pelargoniums require to have plenty of room, in order that the side branches may not touch each other. Push on Azaleas for decorative purposes in a warm, moist atmosphere; at this season few plants are more useful. Epacrises started now, so as to get their wood well ripened, may be had in full blossom in November. Of Amaryllids and Deutzia spectabilis, there should be a good supply; both may be had in bloom early in the season, and under good treatment they last long in beauty. Many Cinerarias will now be in full blossom, and in warm greenhouses will keep up a brilliant display for some time. Seed may be saved from some of the best kinds, which, when out of flower, may be set aside for that purpose.

STOVE AND FORCING PIT.

See that the plants in these structures receive no check. Increase the temperature gradually, a degree or two every week, and take care to shut up with 10° or 15° of sun heat on clear days. Keep a moist, growing atmosphere, and look well to the watering and potting of such plants as require it.

PITS AND FRAMES.

Maintain a kindly heat in the cutting frame; top cuttings which have taken root, and are beginning to grow. Divide and pot singly into 3-inch pots the old stools of herbaceous Lobelias. Fill several boxes with roots of Verbena venosa, and place them in heat.—W. Keane.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

It has been a most favourable week for all out-door work. Some of our neighbours have been *sowing* their Onions and Carrots; our ground is not yet ready, and we have little desire to sow twice over. The ground might now soon be put in good order for sowing; indeed, as stated last week, it never was drier and sweeter at this season. Still, a press of other matters has prevented our getting the ground exactly to our mind, and we have a dread of sowing full crops of the above vegetables in cold soils even at the end of February. Half a dozen times in thirty years we have known Onions and Carrots fail from early sowing. The ground in these cases was in good condition. The seeds were good, as was proved by sowing earlier in heat, and later in the open air, but still the early-sown crop was a failure, and in some cases late sowing did not make up for it. If we were sure that such weather as we had up to the 25th were to continue, then we should say, Sow Onions, and even Carrots, and especially Parsnips; but if we have a sharp frost in the middle of March where would the tender chipped seedlings be? There are many things hardy enough for their seeds to stand a great amount of cold, and for the seedlings too to resist a great degree of cold when they are fairly above ground, that will at once give way just when the roots and stem emerge from the seed. It is rather singular, and we cannot account for it, though we have proved the fact over and over again, that seeds of hardy plants sown in spring, after being kept in comfortable bags or drawers all the winter, will be injured in spring by frost after germination has taken place, whilst seeds self-sown in autumn, or sown in autumn and re-

maining dormant all the winter, will not be at all influenced, or if so, only to a slight degree, by the spring frosts. In cold soils we have found it of little use to sow Mignonette out of doors until the middle or the end of April. Self-sown seeds will often stand the winter; and when we have several times sown at the end of October we have had fine lines of seedlings in May and June, which we would have looked for in vain if we had sown in February or March. The seeds which lie all the winter in the ground seem to be less influenced by changes of weather, and thus remain more dormant until the necessary heat as well as the other conditions for germination visit them; whilst seeds carefully saved in bags or drawers, when exposed to moisture and a little heat begin to germinate at once, and the little stems and rootlets are more liable to injury. We merely mention these facts, that our readers may not be in too great a hurry in this tempting weather to commit their seeds to the ground. The middle of March will do very well for Onions, the end of March and the beginning of April will do well for Carrots, and the middle of April will be time enough for Beet, Salsafy, Scorzonera, &c. Much earlier sowing will be attended with risk, especially if damp and frosty weather follow each other.

We have known a good many cases where seedsmen were blamed, and even changed, when they really supplied a first-rate article; but the seedlings were destroyed by frost just as they had chipped, and before they had a chance of appearing above ground. We are fully convinced that Onions and Carrots, when once the seed leaves are above ground, will stand an amount of frost which the seedlings will not do just after germination has commenced.

In *planting Potatoes*, &c., by doing the work in a sunny day time will be gained, not in regularly digging, but in scraping off and laying over the sets the fine, heated, dried, pulverised soil on the surface. We are supposing that the ground has been ridged or well dug previously.

Cabbages.—Our early crops are worse than we expected. We have taken up all the soundest out of the wreck, and planted them in rows together. We have had small plants, that survived in beds, taken up, potted separately, and put under glass with a little heat, and these, with plenty of air, are now so well rooted, that if next week be fine we shall turn them out into finely-pulverised soil, so that the disaster will be as little felt as possible. Smaller plants still we have planted over a slight hotbed of tree leaves in a rich rough compost of rotten dung and loam, and these, when established, we shall lift with little balls. We have also pricked off some seedlings just showing the first rough leaf, and which will soon be nice plants. We are always learning. We have been very successful of late years from plants sown in the middle and towards the end of July. We would be inclined to sow at that time for fine early Cabbages, but to sow also twice in September for later and surer returns. If our ground had been poorer, or if we had sown some six weeks later, we should have had more Cabbages to-day.

Part of the ground occupied with Cabbage stumps and some new Cabbages that have failed, we have had thrown out into beds and ridges; beds 4 feet in width for Celery, and ridges 4½ to 5 feet wine for *early Peas*, as Ringleader, Carter's and Chater's First, Sangster's No. 1, and that prolific Pea, Dickson's Early Favourite. The centre of the ridge was made into a hollow shallow trench before sowing to give the Peas every chance if we should have a dry summer, of which we have a dread, as our stores of water are as yet so low. The ground marked out for these ridges was first deeply dug and a little manure added, then the soil from the trench was thrown on them, the hollow made for the Peas well trodden, and the Peas scattered thinly in a broad trench after being red-leaded, then patted down and covered. We thus generally obtain heavy crops. We are obliged to make the most of little ground, and frequently we have Lettuces, Radishes, and early Potatoes in the trenches before the *Celery* is ready to plant out. For crisp, sweet Celery, decayed hotbed dung, with more tree leaves in it than dung, is best. We have grown Celery to enormous size, but now we are content with moderate, useful heads. When we used to send in huge blanched heads, there was little more went to table than from a nice moderate-sized plant. For our own use, except seeing that it was crisp, we would care nothing for Celery in its raw state, but it would be invaluable to us as a component of clear soup; and though anything but healthful when green, it is a great help to many, even in a medical point of view, when blanched. A small piece of ground as a bed, would enable the cottager to have a lot in little room. We generally grow it in beds, three and four rows across, and when the plants are tied there is no difficulty in the earthing-up. We have some nice red Celery now, but the Incomparable White has stood well. The great advantage of this is, that if you grow a plant 15 inches high you can send a foot of it blanched to table, and that is longer than generally goes there from the longest head, unless the proprietors of the establishment will insist on cutting up their own Celery. Very little earthing-up is required for this sort—a matter of great importance, but it must be sown early. The cottager, if he has no other means, ought to sow now in pots near his kitchen fire. It will repay the extra labour. To our taste no nut is so sweet as a piece of crisp well-blanched Celery.

FRUIT GARDEN.

We proceeded with pruning and nailing, and gave all the air possible to orchard houses to keep the trees back, so that the weather may be mild before the blossoms open. The later they are in opening the less will be the risk in unheated houses. Plants in pots require to be examined to see that they are not too dry. Forced Vines and Peaches will need to be regularly stopped, and the shoots thinned. Notwithstanding the absence of sun, the Peaches have set well—so well as to render a good deal of thinning necessary if the fruit stands well, but after such sunless weather, the fruit, though appearing all right at first, will frequently drop, the heart proving defective. However, there is no trace of this as yet, but it will be prudent not to thin too much until time prove them. The chief security in such sunless weather is to keep a rather low temperature in the house, so that the excitement given shall be in proportion to the light afforded. Strawberry plants are now showing well, coming strong and fine, and, therefore, looking for a pretty free watering with weak manure water.—R. F.

TRADE CATALOGUES RECEIVED.

J. Carter, Dunnett, & Beale, 237 and 238, High Holborn, London, W.C.—*Carter's Farmers' Calendar.*

Clark & Co., 42, Bishopsgate Street Without, London, E.C.—*Amateurs' Guide and List of Vegetable, Flower, and Agricultural Seeds.*

Hooper & Co., Covent Garden Market, London, W.C.—*Gardening Guide and General Catalogue.*

Sutton & Sons, Reading.—*Suttons' Farmers' Year Book and Select List of Grass and other Farm Seeds.*

TO CORRESPONDENTS.

N.B.—Many questions must remain unanswered until next week.

Books (*H. T. H.*).—"Kitchen Gardening for the Many" can be had post free from our office for five postage stamps. It details Mushroom culture. "Fruit Gardening for the Many" details Filbert culture; it can be had in the same way for five postage stamps. (*J. W.*).—We do not recognise such a book as you describe.

Cuttings (*E. M. M.*).—Some nurserymen and florists occasionally advertise them, but we cannot tell where you can now apply.

Heating a Boiler by Gas (*P. H. B.*).—No one could foretell the cost, even if the seasons were always alike and you had told the price of gas, which you have not. We do not think gas heating suitable to your extent of buildings.

Select Hollyhocks (*J. W. B.*).—The following are good and cheap:—Fred. Chater, Gem of Yellows Improved, Alexander Shearer, Black Knight, Chairman, Lady Middleton, Rev. E. Hawke, Mrs. F. McKenzie, Purple Prince, Quadroon, Queen of the Whites, Stanstead Rival, Queen of the Buffs, Illuminator, Mrs. Chater, Willingham Defiance, In Memoriam, and Lilac Model.

Planting (*C. A. Dunn.*)—Any trees and shrubs in pots might be planted out now, and so may evergreen shrubs in pots; but fruit trees, Roses, and other deciduous trees and shrubs not in pots had better not be removed until September or October, as soon as the leaves begin to fall.

Geranium Leaves Spotted (*J. S.*).—The leaves have the appearance common to those grown in a rich soil, and kept in a close but cold moist atmosphere. There is no insect on the leaves. We think if you give the plants more air, and only water to keep the foliage from flagging, with a position near the glass, and a temperature of 45° or 50°, they will recover in a short time.

Nemophila insignis and N. maculata in Pots (*A. B.*).—Your plants being from seed sown last September, they will, though they are now showing flower, be suitable for spring gardening, but we should strongly urge the necessity of withdrawing the lights of the frame whenever the weather is mild, employing them only in very severe weather; indeed, harden them off at once so as to plant out by the middle of March. They will not flower much before May, unless you keep them under glass.

Centaurea candidissima Propagation (——).—We presume your old plants have side shoots 2 or 3 inches long; if not, place them in a gentle heat of 50° to 55° until they have; then take them off close to the stem, pare the base smooth with a sharp knife, and insert them singly in small pots in sandy soil. Making a hole in the centre of each pot, drop in a little silver sand, then introduce the cutting, fill-in round it with silver sand, and make firm. Place the pots in a bottom heat of 70° to 75°, and keep close, moist, and shaded from sun. Be careful to keep the

soil no more than moist, otherwise the cuttings will damp off. They will make good plants by the end of May.

SOLANUM CAPSICASTRUM SOWING (*M. G.*).—Sow early in March in sandy turfy loam with a little leaf soil, just covering the seed, and place in a hotbed of 70°. When the plants come up keep them near the glass, and when the rough leaves appear pot the seedlings singly in small pots, and continue them in the hotbed, shading from bright sun until established; then harden them off and remove them to a light airy position in a greenhouse. Shift as the plants fill the pots with roots, stopping the side shoots at the third joint, but training the leader erect, and so as to form pyramids. Seedlings do not flower freely, consequently the berries during the first two seasons are not numerous.

ABUTILON STRIATUM SOWING (*Idem*).—Sow the seeds in sandy loam with a little leaf soil added, and place them in a hotbed, potting-off the seedlings when a few inches high, and when they are established remove them to a greenhouse, repotting as they fill their pots with roots. The plants will not flower this season, therefore in winter keep them rather dry, prune in spring, and repot when the fresh shoots are 2 or 3 inches long.

PYRUS (CYDONIA) JAPONICA SOWING (*Idem*).—Prepare a pot or pan with good drainage, and fill it to within half an inch of the rim with light turfy loam. Scatter the seed evenly on the surface, and cover it with fine soil. The pan may be placed in a gentle hotbed until the seedlings appear, and should then be removed to a cold frame. When the seedlings have two or three rough leaves, plant them out in a sheltered situation in lines 6 inches apart, and 3 inches asunder in the rows, shading from bright sun for a few days, and watering as required.

GERANIUMS AND CALCEOLARIAS FOR BEDDING (*Idem*).—*Golden Variegated:* Mrs. Pollock, Golden Chain, Lady Cullum, Cloth of Gold, Luna, and Sunray. *Silver Variegated:* Bijou, Brilliant, Queen of Queens, Lady Plymouth, and May Queen. *Zonal:* Beauté de Suresnes (deep rose), Rose Rendatler, Crimson Perfection, Blazer, Little Excellent, Waltham Seedling, Sunlight, Christine Nosegay, Le Grand, Excellent, Queen of Nosegays, and White Perfection. *Calceolarias:* Aurea floribunda, Amplexicaulis, Prince of Orange, Prince of Orange (Yellow), Beauty of Montreal, Gem, and Sparkler.

BORDER SOWING WITH ANNUALS (*A. C.*).—As you do not wish to go to any great expense we would sow in lines, and you will have room for twelve at 1 foot apart. Next the edge we would have—1, Lobelia speciosa, which will need to be sown in heat, and its growth encouraged, planting out in May; 2, Sweet Alyssum; 3, Golden Feather Pyrethrum, 4, Saponaria calabrica; 5, Mignonette; 6, Nasturtium, Tom Thumb Scarlet; 7, Large-flowering Ten-week Stock, violet; 8, Tagetes signata pumila; 9, Perilla nankinensis; 10, White Branching Larkspur; 11, Blue Branching Larkspur; 12, Prince's Feather.

PLANT PROPAGATION (*J. L.*).—1, Erica carnea is increased by parting the tufts, though the long shoots root freely if they are detached and in the ground, leaving about 3 inches of the growing points outside. 2, Winter Aconite is raised from seed sown as soon as ripe in any sandy soil, and by offsets as soon as the flowering is past. 3, Melilotus leucantha is raised from seed sown in sandy soil in gentle heat. You give the popular name of 2, its proper name is Eranthis hyemalis; 3, is popularly known as Melilot; 1 is known as Early-flowering Heath.

PLANTING VINES (*Idem*).—You will not gain anything by now planting young Vines where you intend your new vinery to be. No doubt the Vines would become well-established as regards roots, but the canes would not ripen, so that you would need to cut down and have a year's growth before you could hope for fruit.

GRAFTING A VINE—FUMIGATING PEACH TREES IN FLOWER (*A. B. C.*).—Foster's White Seedling will succeed admirably on the Royal Muscadine. The only effect is in its accelerating the ripening. Fumigation with tobacco will not injure the flowers of Peach or Nectarine trees, care being taken to deliver the smoke cool, and have the flowers dry. Calceolarias will flower quite as well if they are planted out where they are to flower, at the close of March or early in April, protection being given them in frosty weather.

VINES ON THE BACK WALL OF A GREENHOUSE (*Poplar*).—Your Vine ought to have been pruned in December. We would now remove any loose bark, and wash it with a solution of soft soap at the rate of 2 ozs. to the gallon, adding enough flowers of sulphur to bring it to the consistency of paint. You will require but a small quantity for one Vine; therefore, only use a proportionate part of the soft soap. Apply the mixture with a brush. Bring down the cane and train it horizontally at 1 foot from the ground, and it will break at almost every eye; rub off all except those shoots which are, as nearly as possible, 18 inches apart, and train these upright to produce shoots for fruiting another year. If your cane is planted in the centre of the house, train a shoot from the base for covering the part for which you will not this year have a shoot, and in the autumn you can train it horizontally, and shoots from it will in due time come for covering the other parts of the wall. Do not prune the Vine now, but as soon as it grows rub away the eyes of the lengths not wanted, and when there are leaves cut away any superfluous length. A bottom heat of 70° is suitable for Geranium cuttings.

PLANTING GOLDEN FEATHER PYRETHRUM (*Ignoramus*).—For an edging the plants should be 9 inches apart. We have double rows and plant quincunx fashion, allowing 6 inches between the rows, but the plants are 9 inches apart. Keep the flowers closely picked off.

HYACINTHS IN GLASSES (*Idem*).—The flowering being past, your best plan will be to plant them out in a sheltered situation out of doors. They may recover so as to bloom in the out-door borders, where they are very pretty in spring. The bulbs are of no use for growing in water again.

ANNUALS FOR EARLY SOWING (*Idem*).—Sweet Alyssum, Bartonia aurea, Candytuft, crimson or purple, lilac, and white; Clarkia pulchella and alba; C. elegans rosea and pulcherrima; Collinsia bartsiæfolia, C. bicolor, Erysimum Perofskianum, Eschscholtzia californica, E. crocea, Gilia tricolor, G. tricolor alba, Branching Larkspur, Leptosiphon densiflorus and its variety albus, Limnanthes Douglasii, Lupinus nanus, Lupinus vellow, rose, white, and blue; Mignonette, Nemophila insignis, N. maculata; Saponaria calabrica and its variety alba, Silene pendula and its varieties alba and ruberrima, Venus's Looking-glass, Virginian Stock red and white, Viscaria oculata, and Whitlavia grandiflora.

ORCHARD-HOUSE CLEANING (*A Subscriber*).—You must not syringe the timber with a solution of soft soap, as it would fall on the glass and spoil it. We would give the house a thorough cleaning, and leave the trees alone now that the buds must be swelling. The solution of soft soap and quassia chips may injure the bloom buds. The whole of the timber we would wash with hot soft-soap solution, and thoroughly clean the glass with pure water.

RE-TUBBING TREE FERN (*H. M.*).—Now is the best time. In doing so we would not reduce the ball, but merely loosen the sides, and transfer it entire to a larger tub. Be careful to make the drainage good.

INDIFFERENT HORSERADISH (*A Three-years Subscriber*).—Judging by the piece you enclosed we should say your ground is poor and too heavy for this root. Could you not lighten the soil by trenching it 2 feet deep, and adding sand or ashes? We would make a fresh plantation every year, and use the roots after two years' growth; they will then be three times the thickness of that enclosed, quite white, and tender. Plant full-sized crowns 18 inches deep. That you sent is very woody and of bad colour. You do quite right in striving to please, but some cooks cannot be pleased, and such as a rule receive far too much encouragement from those who ought to discountenance the grumbling of one servant against another.

AMARYLLIS GIGANTEA.—"*W. C.*" four years ago purchased a bulb of Amaryllis gigantea weighing more than a pound, and it annually makes plenty of growth. It is started and grown in heat, but will not flower. Those having succeeded in flowering it will oblige by stating particulars of treatment.

HEADING PLUM TREES (*Constant Reader*).—The leading shoot, or the central one, should be cut back to within 1 foot of the base of last year's growth to induce the production of shoots for covering the wall, but the terminal shoots of the principal side branches should not be shortened but left at their full length, unless more shoots are required for covering the wall, when it may be necessary to shorten their leaders to obtain shoots where such are required.

ORANGE TREES CASTING THEIR LEAVES AND FLOWERS (*J. L.*).—There can be no two opinions as to the cause of this; it arises from a bad state of the roots, no doubt occasioned by the damp atmosphere and want of warmth. You seem to think the roots are all right, but we question that. We think the soil is too wet, and the roots not in a healthy state. Remove the surface soil down to the roots, and top-dress with light, rich, turfy loam, adding a third of fresh horse droppings. The drainage of the border in which the pots are sunk we apprehend is not good. A top-dressing of cocoa-nut refuse will serve as well as the loam, and some think better. Do not overwater at the root, and maintain a temperature of 50° at night. The Ferns can have no prejudicial effect, only the rockwork may, if it communicates with the border, render the latter too wet, and be in effect the evil you complain of. See that the drainage of the pots is good. Why not make a good border and plant the trees out? They do far better than in pots or tubs.

LAPAGERIA ALBA FROM SEED (*T. H.*).—The seeds should be sown now in a compost of fibrous peat, covering them with fine soil, and after watering gently, place the pots in a hotbed of from 70° to 75°. Keep the soil moist, and when the plants appear admit air moderately, and place them near the glass. Continue them in the hotbed, or transfer them to another if the heat in the first declines, and when the plants are a few inches high remove them to a cool stove or warm greenhouse. We think it best to sow the seeds singly in 3-inch pots, and transfer the plants to larger when the roots show at the sides. The most suitable compost is turfy brown peat, torn in pieces with the hand and used rather rough, though for young plants it should be smaller than for established plants. The drainage should be extra good, as the watering must be copious; indeed, it is not possible to overwater if the drainage is efficient.

REMOVING SHRUBS (*A. G.*).—You would be acting illegally in removing the trees and shrubs without the consent of the landlord. In taking up the shrubs be careful to preserve all the small roots you can, and if you could lift them with a ball of soil all the better, but any soil falling away freely should be removed, as it would be lost in transit, and increase the weight without doing any corresponding good. Take up the deciduous trees and fruit trees carefully, preserving all the fibres practicable. There is no better material in which to wrap-up the roots than dry straw, the roots being placed together and then covered with straw to keep them from the air. The top will need to be secured carefully with bast matting and string to guard against breakage. In addition to covering the roots with straw, they should be wrapped in mats if they are to be transmitted by rail, so as to make neat packages. You may safely move them at this time of year. Could you not remove them in a cart? You would in that case save much of the trouble of packing, but it is necessary in any case to cover the roots with mats, so as to protect them from the drying influences of sun and wind.

PLANTS FOR THE BACK WALL OF A GREENHOUSE (*Amateur*).—The back wall of a greenhouse is not in general a good place for plants. A good yellow-flowering plant is Acacia oleifolia elegans, which has been in flower with us since last September. Habrothamnus elegans has deep rose-coloured flowers, and is fine. There is no scarlet-flowering plant that would suit except Camellias, and Monarch, bright scarlet, large, with fine foliage, would suit. The best blue is Heliotrope—Voltaireanum being good, and Monsieur Hamaitre fine for winter-flowering. Twelve select greenhouse plants are Acacia armata, Chorozema cordatum splendens, Correa Brilliant, Cytisus racemosus, Nerium rubrum plenum, Pimelea spectabilis rosea, Polygala Dalmaisiana, Rhododendron jasminiflorum, Vallota purpurea, Libonia floribunda, Eriostemon linearifolium, and Eutaxia floribunda.

TACSONIA VAN-VOLXEMI GOING OFF (*T. H. T.*).—We should attribute the falling of the leaves to the cold, and it may be that the plant is at rest. We should ascertain the state of the wood, and if that is all right we would prune early in March, and encourage growth by keeping rather close and warm for a short time. If the wood is dried-up the plant is dead, and you will have no alternative but to replant. Our plant in a cool greenhouse is now growing freely, and has been growing all the winter, showing flower at every joint. It is planted out in the border in turfy loam with a little leaf soil. It has not had any water since October, except that which drained from the pots on the stage over the border.

MALE AUCUBAS (*Idem*).—Both male and female plants are produced from the berries. Plants raised from berries of one plant are partly male plants and the rest female plants. The males are of more slender growth than the females, and the leaves have a tendency to droop, but there is no certain mode of distinguishing the male from the female plants until

they flower, or form buds for flowering. The flowers of the female may be impregnated, though the male flowers appear much earlier, by collecting the pollen when dry on clean white paper, and keeping it in a dry cool place until the female plants flower, then dusting the pollen over them.

Wild Decorative Plants (*A Welshman*).—We cannot advise you, not knowing the flora of your locality. Why not judge for yourself and employ any ornamental plant that you observe? We once saw a table well decorated with the leaves and flowers of Herb Robert, Geranium Robertianum.

Age of Vines for Vinery Planting (*Mary*).—One-year-old are to be preferred if well grown.

Planting a Vinery (*R. Rayne*).—You may plant Vines in the vinery, to be taken longitudinally along the stove house, and to be brought back into the vinery to winter. Three would do, and these we would make two Muscats and one Hamburgh. The Vines in the vinery ought to answer very well. If you wish them to have the whole house in summer and to have plants chiefly in winter, then have eight Vines. If you want flowering plants in summer, then five or six Vines would be enough. For succession we would have—Dutch Sweetwater, Royal Muscadine, Black Hamburgh, Black Muscat of Alexandria, Black Prince, Trentham Black, Bowood Muscat, Lady Downe's, and Trebbiano.

Paradise Apple and Quince Stock Propagation (*C. T. H.*).—Paradise stocks are increased by layers at this season, it being necessary to have good "stools" to begin with, and these it will take you some time to establish. Layers made now will be fit to detach in November, and may be planted in lines 2 feet apart, and 6 inches from each other in the lines. In two years they will be fit to graft. Cuttings may also be put in now firmly in sandy loam, taking them off about 8 inches in length, with a small portion of old wood, and removing all the eyes except the three uppermost; all, except that part with the eyes is to be placed in the soil. Water, if necessary, and cover with a hand-glass, removing it in July. Shade from bright sun as required. Your best plan would be to purchase a few stocks. Quince stocks are raised from cuttings, taking the young wood, and cutting it into lengths of 10 inches. The treatment is the same as for Apple cuttings. They may also be raised from layers and by suckers. The cuttings will be rooted by autumn, and may then be planted out the same as the Paradise stocks. It would serve you better to purchase rather than to propagate.

Name of Fruit (*D. B. T*).—Golden Noble.

POULTRY, BEE, AND PIGEON CHRONICLE.

RESULTS OF POULTRY-KEEPING.

I will state my experience as a beginner.

I have three Brahma pullets and one cockerel, hatched in May last year. The first pullet commenced to lay on November 24th, the second on December 14th, and the third on December 17th. During this period, the pullet that first commenced to lay has been broody for a fortnight. The total quantity of eggs they have laid up to the present date (February 11th) is 155, a result, I think you will admit, much more favourable than that referred to by your correspondent, Mr. R. Wilson. My feeding has been barleymeal in the morning, and Indian corn or barley in the evening, at a cost for each fowl of about 1½*d.* per week.—E.

JUDGES CLAIMING BIRDS AT POULTRY SHOWS.

Some of my friends have directed my attention to a letter inserted in the Journal of last week, from Mr. James Watts, of Hazlewell Hall, reflecting on the claiming of pens of poultry by one of the Judges at the late Wolverhampton Poultry Show, prior to its being opened to the public. Permit me, as one of the Judges, to state I was not inculpated in this transaction in any way, for so far from my ever making the office of poultry-judge a matter of pecuniary gain, at all the Wolverhampton Shows, under the management of various poultry committees, I have at once willingly complied with their desire that I should arbitrate for them, but of my own free will it has always been a gratuitous duty, and though comparatively a trifling amount, my unavoidable cab and railway expenses have also been defrayed out of my own pocket. The simple fact is this, that I never bought or sold a single bird at any one of these Shows.—Edward Hewitt.

THE WAVERLEY POULTRY AND PIGEON SHOW.

The Waverley Poultry Association's fifth Exhibition was held at Melrose on the 22nd and 23rd ult. Of Poultry and Pigeons the entries were larger than at any previous show, but there were very few specimens of small birds. While the birds were under the care of the Committee they were well attended to, and were seldom left by Mr. Park, who acted in the place of Mr. Turnbull, the Honorary Secretary, who was ill.

Of Silver-Grey and Dark *Dorkings* there were some good birds, though the entries in these classes were not numerous. In the *Spanish* class Mr. Waugh, of Melrose, showed a grand cockerel, and there were several other very good male birds, but not one good hen. The winning *Cochins* were both Buffs. The White and Partridge varieties were too small to compete successfully. In *Brahmas* the winners were of the Dark variety. The second-prize birds were larger than the first, but the latter were most exquisite in colour and lacing, the former being also rather rusty in hue. There was but one class of *Game*, which we consider a mistake, but there were some good birds, although several pens seemed to be sadly overshown. The winners were Black Reds, the first-prize birds being in splendid bloom, and perfect in shape and handling, though in the latter respect they were scarcely equal to the second-prize birds, although these were not up to them in appearance. There were not many entries in the *Hamburgh* classes, but the winners were as good as could be desired, the Golden-pencilled pullets being excellent in marking. Among the Golden-spangled Hamburghs one of the hens was found to be trimmed, and was immediately disqualified. The first-prize pen in this class was an even pair of birds, well shown. The Silver-pencilled were good, but the first-prize Silver-spangled were a grand pair. In the Variety class a valuable pair of Crêve-Cœurs were first, Silver Polands second, and Black Hamburghs third, but a nice pair of Black Polands were too late for competition.

All the classes of *Bantams* were well filled, but many pens were somewhat out of condition. Of the Black Red Game Bantams, one pen, which otherwise would most assuredly have won, were discovered to be very neatly shortened on the fourth and fifth pinion feathers of each wing, and were disqualified at once. The first-prize pair in that class were excellent. There was scarcely one really good Black Red cockerel with the proper quota of broad feathers in his tail, some showing a vacancy at the top, and others at the bottom, and whether by accident or design we know not; but if the latter, we would advise the exhibitors of that variety never to take feathers out of a Game fowl's tail, as nothing tends more to destroy the symmetry and compactness of appearance so desirable in the breed. In the next class a very pretty pair of Piles was first, good Brown Reds being second. Of the Bantam single cocks, the first-prize bird was a grand Black Red cockerel, and the second a very good Duckwing. Several handsome pens of Bantams were too late for competition.

There were not many entries of *Ducks*. The Aylesbury were very good in quality, but the Rouens even better. The first prize in the Variety class was taken by Mandarins, and the second by Black East Indian. There were some good birds in the cottagers' class. The *Turkeys* and *Geese* were of the highest merit, both as regards size and plumage.

In the *Pigeon* classes the Fantails were good in style and carriage. The first-prize Pouters were Blue-pied, and the second White. The latter were of great length, but not in showing condition. The first-prize Nuns were a grand pair, and in nice order, but an excellent pair was left out, being evidently out of health. The winning Jacobins were both Reds; the first-prize birds were very good in hood and chain. In English Owls only the first-prize pair and the second-prize cock were of the true type, most of the others being too straight in beak. The first-prize Tumblers were Almonds, good in all points, and the second Kites. The winners of the first prize in the Variety class were a very handsome pair of German Letz. The second-prize went to a nice pair of Black Austrian Pouters, the third to good Black Trumpeters, and the fourth to a very neat pair of White African Owls.

Dorkings.—*Silver-Grey*.—1, D. Hardie, Hawick. 2, J. Cunningham, Jarbreoch, Kirkcudbright. *hc*, Earl of Haddington; T. Raines, Stirling. *c*, F. L. Roy, Nenthorn. *Dark*.—1, D. Gellatly, Meigle. 2, T. Raines. *hc*, D. Hardie.

Spanish.—1, D. Waugh, Melrose Mill. 2, Sanderson & Oliver, Morpeth. *hc*, D. Waugh; E. Fearon, Whitehaven; R. Douglas, Langholm; A. Walker, Kilmarnock.

Cochin-China.—1, — Jacob. 2, E. Fearon. *hc*, J. W. Will, Errol; E. Fearon; J. Radoch, Rusley, Glasgow. *c*, J. H. Dawes, Moseley Hall.

Brahma Pootra.—1, W. Brownlie, Kirkcaldy. 2, L. Stewart, Edinburgh. *hc*, T. Raines. *c*, T. Simpson, Melrose; L. Stewart.

Game.—1, J. Brough, Carlisle. 2, D. Hardie. *hc*, J. W. Will (3); J. Henderson, Musselburgh. *c*, A. Dewar, Linton, Cluny; D. Harley, Edinburgh; J. Logan, East Shiels, Carnwsth.

Hamburghs.—*Golden-pencilled*.—1, W. R. Park, Melrose. 2, A. Pratt, Kirkcaldy. *hc*, J. W. Will; W. R. Park. *Golden-spangled*.—1, R. Dickson, Selkirk. 2, H. Pickles, jun., Earby. *hc*, J. W. Will. *Silver-pencilled*.—1, H. Pickles, jun. 2, R. Blackburn, Choppington, Morpeth. *Silver-spangled*.—1, J. W. Will. 2, Ashton & Booth, Mottram. *hc*, W. R. Park. *c*, F. L. Roy; Miss Donn.

Any other Variety.—1, W. R. Park (Crève-Cœur). 2, H. Bowker, Keighley (Silver Polands). 3, J. P. Fawcet, Whitby (Black Hamburghs). *vhc*, E. Fearon, Whitehaven (Polish). *hc*, W. Bearpark, Ainderby Steeple (Silver Polands); R. Parsons, Bedlington (Polands); W. R. Park (Crève-Cœur). *c*, J. Logan (Hoodans).

Game Bantams.—*Black Red*.—1, G. Hall, Kendal. 2, J. W. Will. *hc*, D. Hardie; T. Raines; W. Brownlie. *Any other Variety*.—1, Bellingham & Gill (Pile). 2, J. W. Will (Brown Red). *hc*, J. Archibald, Earlston (Brown Red); W. Brownlie (Duckwing); D. Harley (Brown Red).

Bantams (Any other Variety).—1, Mrs. Hardie (Black). 2, Miss R. C. Frew (Black). *hc*, J. Archibald (Japanese); S. & R. Ashton, Mottram, Manchester; A. Johnston, Bathgate. *Cock*.—1, G. Todd, Monkwearmouth, Sunderland (Black Red). 2, T. C. & E. Newbitt. *hc*, G. Miles, Newstead (Black); J. Ferry, Cowpen, Morpeth (Brown Red). *c*, W. Goddard, Earlston (Black Red); J. Gibson, Melrose (Japanese); W. Scott, Jedburgh.

Ducks.—*Aylesbury*.—1, J. Scott, Newhall. 2, J. W. Will. *c*, J. Grieve, Broomhill, Melrose. *Rouen*.—1 and 2, D. Hardie. *Any other Variety*.—1, S. & R. Ashton.

Selling Class.—1, W. R. Park. 2, J. Scott, Newhall. *hc*, E. Fearon.

Cottagers' Class.—1, J. Beattie, Rink, Selkirk (Brahmas). 2, Mrs. Waugh, Melrose (Spanish). *hc*, Sanderson & Oliver, Morpeth (Spanish); W. Linton, Selkirk (Crève-Cœur). *c*, R. Renton, Dingleton (Spanish); T. Brown, Melrose; E. Strickling, Brackenthwaite, Whitehaven.

Turkeys.—1, Earl of Haddington. 2, A. Johnstone, Bathgate. *c*, J. Logan (Cambridge.)

Geese.—1, D. Hardie (Toulouse). 2 and *hc*, J. Logan (Toulouse).

PIGEONS.

Fantails.—1, A. Crosbie, Melrose. 2, M. Crosbie, Gattonside. *hc*, Miss B. P. Frew.

Pouters.—1, M'Gill Skinner, Edinburgh. 2, F. M'Crae, Aberdeen. *hc*, J. Coutts, Ellieston, St. Boswells; G. B. Phillips, Ayr.

Nuns.—1, R. Paterson, Melrose. 2, W. Bearpark. *hc*, J. Turnbull, Melrose.

Jacobins.—1, W. E. Easton. 2, F. Moore, Burnley. *hc*, R. Paterson; J. G. Spence. *c*, J. Campbell.

TURBITS.—1, R. Paterson. 2, A. Crosbie. *hc*, R. Paterson; W. E. Easton. *c*, F. L. Roy.

OWLS (English).—1, R. Paterson. 2, W. Goddard. *hc*, J. Coutts; J. G. Spence.

TUMBLERS.—1, F. Moore. 2, F. M'Crae. *hc*, W. Goddard; A. Johnston.

ANY OTHER VARIETY.—1, A. Crosbie (Letz). 2, W. Goddard (Austrian Ponters). 3, T. Rule (Trumpeters). 4, W. Goddard (White Owls). *hc*, W. Taylor, Durham; T. Rule (Trumpeters); W. Bearpark; W. Goddard (White Owls); A. Johnstone, Bathgate (Porcelains).

SELLING CLASS.—1, W. Goddard (Ice Pigeons). 2, J. Campbell (Carriers). *hc*, G. B Phillips (Magpies). *c*, A. Hutton, Carolside (Jacobins); J. Turnbull (Fantails).

CAGE BIRDS.

CANARIES.—*Yellow Don.*—1, G. Laidlaw, Galashiels. 2, J. Muirhead, Galashiels. *hc*, R. Laurie, Melrose. *Buff Don.*—1, G. Laidlaw. 2, W. Bogie, Melrose. *hc*, A. Polson, Galashiels. *Yellow Flecked.*—1, A Polson. *Buff Flecked.*—1, E. Hunter, Tillicoultry. 2, A. Polson. *Common.*—1, C. Mann, Newstead. 2, J. Gibson, Melrose.

CAGE BIRD (Canaries and Goldfinches excepted).—1, J. Turnhull. 2, Miss E. Waugh.

GOLDFINCHES.—1 and 2, R. Paterson. *hc*, W. Bogie.

The Judge was Mr. E. Hatton, Pudsey, Leeds.

FARM BREEDING AND MANAGEMENT OF POULTRY.

WE have been requested to state that in the report of the discussion which followed the reading of a paper on this subject by the Rev. G. A. Brooke, at a recent meeting of the Midland Farmers' Club, the remarks of Mr. T. B. Wright were given in an abridged form, and consequently in one or two instances did not fully represent the views of the speaker. We therefore readily comply with a request, and give the remarks of so good an authority from another and more complete report.

Mr. WRIGHT said that the first point which occurred to his mind was that it was impossible to lay down any strict rule as to the breed which should be recommended to be universally kept. Difference in climate, soil, and convenience had to be considered. Some poultry required great ranges, while others did well in confined spaces. Such varieties as Game or Hamburghs would be worthless if kept in a confined space. With regard to keeping poultry generally, one of the great difficulties was that two runs or yards were requisite—one for the old and the other for young birds. Without such accommodation it was almost impossible to keep them profitably or satisfactorily. Many of their agricultural friends had out-barns, where the chickens could be sent when old enough to leave the hen, where they could be fed at little cost, and thrived admirably. Where they had not two walks it was well for friends to join—the one to keep the old breeding stock and the other the young birds. With regard to which was the best variety of fowls for farmers' use, in anything like a favourable situation the Dorkings were to be recommended. In the number of eggs they laid they were not equal to either the Hamburghs or the Brahmas; but for the table there was not a breed equal to them. They were very fair foragers, getting their own living as far as possible, and very well repaid the food they ate. They came to market great weights at a tolerably early age—a couple of pullets, for instance, weighing from 10 to 11 lbs. at eight months old. In damp localities Dorkings would not do, as they were in such situations liable to roup; the latter tendency arising generally not so much from the nature of the fowl, and their liability to that disease, as from want of care on the part of persons who keep them. If Dorkings were not so much crowded together, they would be very much less affected by roup. With regard to roosts and the care of poultry, he had been very fortunate in hatching a considerable number of chickens every year. He had only a small roosting place, and till he could kill them off they were very crowded. Notwithstanding that, however, he had rarely any disease among them; and when disease did appear it was always introduced by fresh birds from another district. What he did was to have the roosting places swept out every morning, and the floor sprinkled with sawdust and MacDougall's disinfecting powder; and he recommended every poultry—and he might say stock—keeper to use the latter, as a preventive of disease. As to feeding, a variety of food was to some extent necessary; and he thought that some errors were committed in regard to feeding. For his own part he never used Indian corn, as it made the poultry fat and gross, and the eggs had not the right flavour. The food he had used for a long time had been a small but good sample of English wheat, and barley; the latter, when steeped, being an excellent thing for bringing fowls into high condition. He soaked the grain one day, putting it afterwards into an iron dish in the oven or near the fire until it was sprouted a little. With regard to large kinds of poultry, which wanted plenty of bone-forming material, bran, sharps, and meal were very useful; but the best thing he had found for his young Dorkings, in addition to other food, was a good sample of small white peas, which were not expensive keep. In regard to other varieties of fowls, for an amateur who wanted beautiful objects about his place, there was nothing superior to the Silver-spangled Hamburghs. They were constant layers and non-sitters; while, for the table, he was quite certain that no poultry could surpass a couple of young cockerels of this variety, hatched in April, and killed about November or December, weighing about 10 lbs. or 11 lbs. The pencilled were very beautiful, but more delicate; but one of the most useful of all fowls, especially to the inhabitants of our towns or villages, was the old-fashioned Copper Mass, Moonies, Golden Pheasants, or "Red Caps," as they were called in some localities, which, he was sorry to say, had been deteriorating for a number of years. If a large supply of eggs of good size was wanted, no variety was better. If some of their friends could induce the Cochins to abandon their propensity to sit, they would be doing good service. He had had them sitting for months on a heap of stones. They were not, as a rule, very good for the table. A young Cochin cockerel, about five or six months old, would have consumed a wonderful quantity of food, but after that age they were not good, and the pullets were never so. Brahmas might find favour as an amateur's fowl. They were handsome, and laid well; but they were not table fowl, he should say. Malays were a valuable variety, and he was surprised they had not received more attention. They were not handsome in appearance, but, as a table fowl, most excellent. He thought crosses of all kinds in poultry were decided mistakes. They had been told that the best of all crosses was that between the Brahma and the Dorking. For two years he took the opportunity of testing this point fully with some of the best strains, and when the birds were killed they were not so heavy by 3 or 4 lbs. the couple as some pure Dorkings which were hatched at the same time. The crosses had broad, deceptive, flat backs, but no breasts. He thought this was the case with regard to all crosses. Unless there were plenty of rain in the spring, and the worms appeared, poultry never throve so well; and the last three seasons had been against them in that respect. A great mistake was made in the manner of killing poultry. Much of the poultry which came to town was killed, plucked, and sent to market at once. They should be fasted nearly a day before killing, and hung a week or a fortnight according to the state of the weather, when the meat would be much better and much more nutritious.

RABBIT SHOWS—THE UNITED KINGDOM RABBIT CLUB.

MUCH has been said, little has been done, respecting Rabbit shows of recent date. Suggestion follows suggestion very rapidly, but no suggestion is adopted as the final basis upon which a modified exhibition is to be founded. The proposed Society is a very good idea, and I hope the project will be responded to by all the fanciers of London, who seek their standing in the provincial towns, owing to their not having a suitable exhibition of their own. I do not doubt such a society will be successful in attaining its object, but it is necessary that an enterprising gentleman should take the matter in hand. I beg to propose that a committee be formed; that a selection of one or two gentlemen be made from each town where the idea is entertained, so that all may be fairly represented; that the preliminary steps be taken by the projectors; and that they shall nominate the gentlemen (if willing) who are to officiate as the committee. I believe no place could be more suitable for the show than the Crystal Palace, but of course this is an after consideration.

Respecting the Colchester Show, I perceive by the list that a sum of £12 is given for prizes, and I am indeed surprised only £3 should go to the Lops, whereas the remaining £9 is to be equally divided among the three variety classes.

"Is the Rabbit fancy on the decline?" is a question often put, and readily answered. The statistics of the numbers of entries, not including the varieties and lengths of the respective Rabbits exhibited, would not fail to convince the most prejudiced gentleman that the "fancy is steadily increasing every year." Although I see no decline in the fancy, yet I perceive no desire for improvement, such as is exhibited by poultry and other fanciers. I know no reason why the Rabbit fanciers should not count among their numbers gentlemen with enterprise equal to those who wield the affairs of other societies.—A. G. C., *London*.

I AM greatly delighted that my suggestion, as to the formation of a United Kingdom Rabbit Club, has met with the approval of all respectable fanciers; and in taking the first step, I have invited all the Rabbit fanciers in York to meet me on Tuesday, March 7th, in the saloon of the Lecture Hall, when I shall be prepared to explain my scheme; also, to receive suggestions, consider rules, and to enrol members. I shall be glad if those fanciers in the United Kingdom who cannot attend this preliminary meeting, and who are favourable to the cause, would at once write to me and state their opinions as to how such a club shall be worked, the rules, &c. I hope to receive hundreds of letters from all parts, and be warmly supported by the fanciers. I have a strong conviction that if this Club be founded upon a simple and sound basis, it will add greatly to the numbers and to the respectability of the fancy.—M. MILLINGTON, *York*.

BEES NEAR WOLVERHAMPTON.

IT is an old observation that dry summers are productive of honey and wet ones productive of swarms, and this no doubt as a rule still holds good. Our summers of late (probably owing in part to the extensive draining and felling of timber

which has been carried out), seem to have become much drier than they were formerly; and in this district the excessive drought of such seasons as 1868 and 1870 exercises a very prejudicial influence upon the ensuing summer by destroying the crop of Dutch clover, which is the principal source from which the bees collect their honey harvest. In 1868 I obtained a large quantity of first-rate honey, but the drought of the summer almost entirely destroyed the clover for the following season, so that although the weather in 1869 proved very propitious, the bees were for a great part of the summer almost entirely idle, and only collected sufficient honey to supply their daily requirements. The result was that they refused to enter the supers, and all the combs in the stock hives and nadirs were completely filled with brood; and although the bees had ample accommodation they exhibited an almost uncontrollable tendency to swarm. For several weeks I overhauled my storified hives every seven days, and was obliged to excise royal cells time after time to prevent the issue of swarms. At last a copious honeydew made its appearance upon the beech trees, on which the bees were eagerly occupied from morning till night. They at once entered the hitherto-neglected supers, and speedily laid up a considerable store of honey of a very dark inferior quality, bearing a strong resemblance in colour and consistency to common treacle.

In 1870 the bees at once took to their supers, within a few hours of the time when they were put on, and I obtained a tolerable harvest of beautiful clover honey; but I fear the drought which prematurely closed last season has destroyed the clover roots for this summer, and so impaired the prospects of the coming season. In localities where the permanent turf abounds in white clover, the prospect is much more favourable. In 1869, when our clover, sown to succeed barley, was entirely ruined, in Cheshire and other favoured localities the bees were able to amass large stores of excellent honey, whilst we were entirely dependent upon honeydew.—J. E. B.

REGICIDE BEES.

You printed an article at page 131, describing the death of a queen in consequence of strange bees getting into a hive. It said "a few." How can they cause the death? Do they turn regicides, or does their presence make the others become so? —J. L.

[The intrusion of strange bees into a hive will frequently induce an attack upon the queen. It is, however, a debateable point whether the assault is made by the strangers alone, or if the regicidal spirit be also communicated to the native bees.]

NEW BOOK.

The Honey Bee. *By* Dr. Bevan. Third Edition. Edited by W. A. Munn, &c. London: Van Voorst.

We have now lying before us a new volume, which professes to be a third edition of Dr. Bevan's work on the honey bee, "revised, enlarged, and illustrated by William Augustus Munn, F.R.H.S., &c." Knowing that the book originally published by Dr. Bevan has long been held in high estimation by the public as a valuable text book and exponent of English bee-knowledge up to the time at which it was written, though now far behind the wants of the age, we were prepared to welcome an edition that would give by way of notes or addenda a full account of the progress of apiarian science. But so far as information respecting recent discoveries and acknowledged improvements in apiculture is concerned, the book now submitted to us for review is utterly worthless. Its so-called revision has resulted in rendering it a medium for advertising and puffing the merits of a cranky and unsightly-looking hive, which was patented by Major Munn in France a few years ago.

This hive was never either admired or approved of by us, and though it may serve for some experimental purposes, a glance at its cramped combs and ridiculously small frames will be enough to convince anyone who knows aught of the habits and necessities of bees, that it is quite unsuitable for the purpose of abundant honey-gathering. Major Munn would like it to be believed that he was the inventor of the frame system; he even takes credit for it, and asserts that whether frames be square, oval, or triangular, they are all founded on the bar frame which he introduced in 1834, and that the square is that which all bee-hive makers have copied from 1844. This is mere assertion, and without any adequate foundation. It is preposterous to say that Munn's hive has been copied either in Europe or America, or that its invention gave any impetus to scientific bee-keeping. We are only informed now of his attempt to use square frames; his triangular ones were merely devised to enable him to lift his combs into observation-frames, and so far was he from considering them truly moveable, that he at first fixed them to the hive by means of hinges. Dzierzon was the first to develope the use of moveable-comb hives into a system, and that he did not copy Munn is evident from the fact that he has consistently stuck to simple bars, and neither uses nor recommends frames of any kind. All Major Munn's tall talk about "a hive within a hive," "natural habitat," &c., is nonsense. Long before his day Huber employed a hive of moveable frames; and as similar frames, but improved in construction, were encased in wood fifty years ago by the late Dr. Dunbar, of Applegarth, for the double purpose of preserving internal heat and protection against cold—the "hive of hives," or "hive within a hive," is a very old affair indeed.

Frame hives are very convenient to the scientific apiarian, but it may well be doubted how far they conduce to the natural well-doing of bees. Langstroth in America and von Berlepsch in Germany invented almost simultaneously the modern moveable-frame hive, and there is not the slightest reason for supposing that either of them had seen or heard of Major Munn's contrivance.

It is to be regretted that in the new edition of Bevan's work the result of a lawsuit, whereby an attempt to upset Langstroth's patent on the ground of want of originality, should have been mis-stated. It really ended in establishing the validity of Langstroth's claims, and he afterwards obtained an extension of the term for which the patent was granted. The Major in his advertisement says that he feels "somewhat reluctant to challenge any criticisms on his alterations and additions," and well he may, for the only warrant we can find for them is an "idea" which, he states, was once mooted between Dr. Bevan and himself, that the survivor should carry on the experiments they had so often discussed by letter in regard to "my bar-frame hive."

What, then, has this survivor done, or rather undone? The first thing that strikes us is a new arrangement of chapters. For no good reason the old and most natural has been upset, and the frequent references in the various chapters to other chapters bearing on the same subject, which was one of the most valuable features in the original work, have been coolly omitted, apparently for no other end than to be spared the trouble of rewriting them. By the aid of this new arrangement the Major has managed to introduce into different places the greater part of a pamphlet published by him in 1851, and which, but for this circumstance, might soon have passed into oblivion like its predecessor. We observe also that very unnecessary alterations have been made in the language of Dr. Bevan, and sometimes, as in the case of the circular theory of cells (which we believe to be the correct one), the Major reverses the Doctor's opinions without giving his readers the slightest hint that he has done so. Major Munn has not only suppressed matter containing valuable information, but he has, by interpolations in no way distinguished from the original text, made Dr. Bevan give expression to sentiments of which he would have been ashamed. Save us all from such friends. The public now, with this mixture of Bevan and Munn only in their hands, cannot tell what belongs to one and what to the other. Discoveries that belong exclusively to Munn will be attributed to Bevan, and this will be a great pity, for to Munn belongs the credit of revealing things hitherto unknown to the best apiarian authorities. For example, he tells us at page 65, "The sole object of a colony leaving with the old queen is that she may perish after her last laying." Page 69, "Queen bees apparently cannot feed themselves." Page 74, "After the second year's commencement swarming must take place, or the death of the old [queen] will." Page 78, "Whenever this piping commences there is always a queen bee imprisoned within the large drone-like cells in the centre of the combs." Page 195, "I have evidence that the queens are compelled to make their flights twice in each year of their lives, which is but for two after all." Such nonsense, and so contrary to what are facts, ought never to have been associated with the name of Dr. Bevan. And when, we would ask, did bees become unable to elongate brood cells? or give up the practice, in the first instance, of closing them with wax? Perhaps it was at the same time that the "inclined floors" of bar-frame hives were found to be a "sufficient guard," and the collateral system met, in some measure, the requirements of the queen by leaving one side for the daughter to reign, whilst the mother "can continue her egg-laying, and augment he numbers before she perishes in the natural course of things." We cannot advert to all the Major's grand discoveries, but there is one which must not be passed over—viz., "endosmosis." It appears that larvæ require food, and in our ignorance we imagined they devoured it after the manner of other animals. It is not so; incredible as it may appear, the larvæ are nourished by absorption; the process is called "endosmosis."

We are sorry to say that we have as little faith in the truth of this great discovery as in the utility of the Major's invention. The man who fails to correct mistakes is very liable to make them. Though the text of Bevan has been much altered, "*faux couvain* (as Schirach calls it)," still appears in the chapter on diseases of bees. Why did not the Major point out Dr. Bevan's mistake, and tell his readers that "*faux couvain*" is the French translator's equivalent for "foul brood," and what Schirach really wrote was the German "faulbrut." The description which the Major gives of the disease called foul brood, its causes and mode of cure, is absurdly inaccurate. He would have done well before wasting his ink to have taken instructions on the subject from T. W. Woodbury, Esq., of Mount Radford, Exeter.

We hope it is not this gentleman referred to in the advertisement, by the name of "W. E. Woodhurry, Esq., of Exeter;" as the correct designation is known to every apiarian of any standing, whether at home or abroad. We are sure that if the manuscript or proof-sheets

had been submitted to this gentleman, he would either have corrected the numberless errors that appear in the third edition of Bevan, or recommended that the interpolations should be thrown into the fire. Whilst they relate nothing that is really new, they are radically defective in giving little or no information upon many important subjects connected with bee-keeping. When the learner has read and digested the whole work, he will find that he has both been misled and left in ignorance of much that every well-instructed apiarian knows. He will find that senseless alterations, like that at page 82, where "if the swarm be gathered," is put for "if the place," or as at page 265, where Bevan is made to say in regard to bees seeing better when flying than when crawling, "but this is unlikely," have quite perverted and contradicted the teaching of Dr. Bevan. He will be led to suppose that the evidence for the doctrine of parthenogenesis is based entirely on fallacies, and that Munn has given the doctrine a fatal blow by this single statement, "a few drones generally remain until late in the autumn."

We close the book before us without any regret, save for its publication. It brings our knowledge no farther down than the period when Major Munn first published his pamphlet, and the illustrations added to it are very bad. We would recommend those who wish to possess themselves of a copy of Bevan, to get the work as it emanated from his own hands.

Woodbridge Poultry, Pigeon, and Canary Show.—The entries for this Show close on Monday next, March 6th. We understand, should this be a success, the Show will be continued annually. A liberal prize-list offers encouragement to exhibitors.

OUR LETTER BOX.

Fowls Roosting near a Kiln (*W. G.*).—We have no reason to believe it injurious, nor do we believe it is. If the sulphur predominates too much, increase the ventilation. We do not believe artificial heat is ever beneficial. Our theory is to supply heat internally by means of food.

Price of Eggs near London (*R. W.*).—We have no doubt that near London or any very large town eggs may be sold at 1*d.* each all the year round. But it is with them as with everything else produced before its season; if you expect to make the largest average you must produce things at the scarcest time, as it is then they realise most. Thus eggs from the 1st December to the 1st February frequently make 3*d.* each, and when it was once known yours were to be depended upon they would always make 1*d.* each. You will never get two thousand eggs per week on four acres of land.

Feather-eating Hens (*W. W.*).—Some fowls have the hateful propensity you mention, but we have never found it except where they are shut up. We have never had it among fowls at liberty. We cannot help thinking yours must have been in confinement when they began. We advise you to rub all those that have been plucked with compound sulphur ointment. If they are unable to leave their roosting-house at daybreak and yet have daylight, they then begin to peck. If they have full liberty let their house be quite dark, so that they cannot see each other. When they are let out let them be scattered about as much as possible. It is probably only a small number of the birds that indulge this propensity; note them, catch them, and shut them up singly. Baskets will be large enough for them. Hens are far more addicted to pecking than cocks. We believe the bird that seemed inclined to pick himself was more disposed to scratch on account of itching.

Destroying the Vitality of Eggs (*C. H.*).—There are many modes. Some pass a needle straight through the egg, others resort to a vigorous shaking; some give the end a tap just hard enough to crack the shell. To put the egg in boiling water for a moment is effectual; but the best plan, if you want no fertile eggs, is to keep no cock.

Crêve-Cœur's Claws (*J. L.*).—A Crêve-Cœur fowl with five claws is a cross-bred bird.

Silver-pencilled Hamburghs' Markings (*A Beginner*).—The feather would be better if the markings were more cleanly cut. Such a feather as you enclose has a tendency to make what is called "mossy plumage," lacking distinctness. The earlobe should not be large, the size of a four-penny-piece is large enough. We should prefer the bird from which the feather is taken greatly to one deficient in comb and earlobe. The breast should not be as dark as the back, but it should be well pencilled. The more regularly the flight feathers are marked the better; white ones are a disqualification.

Bran as Poultry Food (*Hermit*).—We have the greatest objection to bran as food; it is worthless, and therefore it is immaterial whether it is mixed with hot or cold water. It is about equal to a meal of sawdust for ourselves. Give ground oats or barleymeal morning and evening, and some whole corn for the midday meal.

Cochin Pullet Unable to Move (*Lemon Buff*).—The pullet is in all probability egg-bound. It is a common complaint with pullets, especially with their first eggs. Pull out a flight feather, dip it in oil, pass it down the egg-passage till it meets the egg; keep on lubricating the feather and introducing as much oil as you can till the egg comes away. You may ascertain by feeling that the egg is in the passage, but it must be done gently, as a broken egg is almost always fatal. You must be very careful you put the feather down the egg-passage, as otherwise the operation is useless. If old Cochin hens are very fat, reduce the food; they will not lay while they are very fat.

Breeding Sebright Bantams (*E. T.*).—If the lacing be quite distinct the lighter colour may be only the result of the two breeds, Golden and Silver being kept together; this is frequently done. But if the lacing is getting faint and indistinct you want fresh blood. Your friend has advised you rightly, but it is a long and troublesome process, and we advise you to get a Sebright cock, a dark one, from some one who breeds carefully and makes up his breed as he goes on. From the frequent introduction of these black hens it is almost certain you will buy fresh blood. All you have to do is to see you get a dark one.

Ground Oats for Fowls—"*T. H.*" informs us that they are sold by Mr. C. Dowlen, Flanchford Mill, Reigate, Surrey.

Fowls Dying Suddenly (*S. H.*).—The time of feeding (9 A.M.) is not the cause of death. Probably the birds are too fat; you say they are "full of flesh." Give them barleymeal mashed with water; the mixed barley and rye just before roosting time. Do not give the fat you name.

Chickens' Legs Cramped (*J. J.*).—Keep them dry and warm, give a dessert-spoonful of castor oil if constipated, and feed on oatmeal moistened with ale.

Blue Rumps in Carriers and Dragoons (*F. C. Hassard*).—A full answer to this question was given in our number for January 26th, which see.

Mating a Whole-coloured Blue Jacobin Hen (*K. P.*).—If we understand you aright, your bird is entirely blue-head, wings and tail included. We are utterly at a loss to help you, not knowing anyone who has such birds. A pair of whole-coloured Blacks were exhibited at the great show at the Crystal Palace last December; perhaps the owner could help you. If you matched with an ordinary coloured Blue bird, we fear the produce would be broken-capped, and impure flights and tail, yet the experiment would be worth trying, and patience might be at length rewarded. We cannot undertake to put a price to birds. A pair of good birds would be valuable; one is useless.

Canaries at the Crystal Palace Show.—Several letters relative to our criticisms have reached us, some agreeing with our remarks, some dissenting from them, but we cannot insert them. We will readily insert opinions, however contrary to our own, upon any characteristics of Canaries, but we cannot insert criticisms upon criticisms, which necessarily lead to replies.

American Cheese Boxes for Nadirs (*A. J. F.*).—We should be glad if any of our readers who have used these boxes would state if they require any special cleaning.

METEOROLOGICAL OBSERVATIONS,

Camden, Square, London.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude 111 feet.

Date. 1871. Feb.	9 A.M. Barometer at 32° and Sea level.	9 A.M. Hygrometer. Dry.	9 A.M. Hygrometer. Wet.	9 A.M. Direction of Wind.	9 A.M. Temp. of Soil at 1ft.	In the Day. Shade Temperature. Max.	In the Day. Shade Temperature. Min.	In the Day. Radiation Temperature. In Sun.	In the Day. Radiation Temperature. On Grass.	Rain.
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
We. 22	30.430	35.2	34.5	W.	41.0	49.7	30.8	81.1	29.2	—
Th. 23	30.384	44.0	42.3	S.W.	40.8	54.8	35.4	102.4	32.2	—
Fri. 24	30.422	43.0	41.8	S.W.	40.3	47.3	36.2	63.3	33.0	—
Sat. 25	30.356	43.8	40.9	S.W.	40.5	47.0	41.8	71.3	39.2	—
Sun. 26	30.077	38.5	38.3	S E.	41.0	41.1	38.0	66.3	36.2	0.069
Mo. 27	29.751	50.4	49.1	S.W.	41.5	56.2	39.4	85.0	39.3	0.041
Tu. 28	29.845	51.0	47.8	W.	42.3	52.9	48.3	66.2	46.1	0.028
Means	30.181	43.7	42.7	..	41.1	51.3	38.6	76.5	36.5	0.138

REMARKS.

22nd.—White frost in the morning, fine day.
23rd.—Very fine day.
24th.—Dull morning, and during the day, windy at night.
25th.—Cold dull day.
26th.—Dull morning, fine afternoon, windy after 9 P.M.
27th.—Rain with wind in morning, wind increasing to a gale at night.
28th.—Wet in morning, fine about noon, rain again at 2.45 P.M., and till night, barometer rising sharply.

Another mild week, temperature considerably above the average, and again nearly equal to that of the first week of April.—G. J. Symons.

COVENT GARDEN MARKET.—March 1.

We have but little alteration to report; the improvement noticed last week has continued, and the present fine weather has materially altered for the better the character of those articles raised under glass, imparting to them both quality and colour. A fair amount of business is doing. The Potato trade is steady at the following rates per ton—Flukes, 100*s.* to 120*s.*; York Regents, 80*s.* to 100*s.*; Scotch, 70*s.* to 90*s.*

FRUIT.

	s.	d.	s.	d
Apples ½ sieve	1	6	to 3	0
Apricots doz.	0	0	0	0
Cherries lb.	0	0	0	0
Chestnuts bushel	10	0	18	0
Currants ½ sieve	0	0	0	0
Black do.	0	0	0	0
Figs doz.	0	0	0	0
Filberts lb.	0	0	2	0
Cobs lb.	2	0	2	6
Gooseberries quart	0	0	0	0
Grapes, Hothouse lb.	6	0	12	0
Lemons ℔ 100	6	0	10	0
Melons each	1	0	4	0
Mulberries lb.	0	0	to 0	0
Nectarines doz.	0	0	0	0
Oranges ℔ 100	6	0	10	0
Peaches doz.	0	0	0	0
Pears, kitchen doz.	1	0	3	0
dessert doz.	3	0	8	0
Pine Apples lb.	6	0	10	0
Plums ½ sieve	0	0	0	0
Quinces doz.	0	0	0	0
Raspberries lb.	0	0	0	0
Strawberries lb.	0	0	0	0
Walnuts bushel	10	0	16	0
do. ℔ 100	1	0	2	0

VEGETABLES.

	s.	d.	s.	d
Artichokes doz.	0	0	to 0	0
Asparagus ℔ 100	7	0	10	0
Beans, Kidney ℔ 100	2	0	3	0
Broad bushel	0	0	0	0
Beet, Red doz.	2	0	3	0
Broccoli bundle	0	3	1	6
Brussels Sprouts ½ sieve	3	0	4	0
Cabbage doz.	1	0	2	0
Capsicums ℔ 100	0	0	0	0
Carrots bunch	0	4	0	8
Cauliflower doz.	2	0	6	0
Celery bundle	1	6	2	0
Coleworts doz. bunches	8	0	6	0
Cucumbers each	1	6	3	0
pickling doz.	0	0	0	0
Endive doz.	2	0	0	0
Fennel bunch		3	0	0
Garlic lb.	0	8	0	0
Herbs bunch	0	3	0	0
Horseradish bundle	3	0	5	0
Leeks bunch	0	4	to 0	0
Lettuce doz.	1	0	2	0
Mushrooms pottle	1	0	2	6
Mustard & Cress punnet	0	2	0	0
Onions bushel	4	0	7	0
pickling quart	0	4	0	0
Parsley sieve	3	0	6	0
Parsnips doz.	0	9	1	0
Peas quart	0	0	0	0
Potatoes bushel	2	0	4	0
Kidney do.	3	0	4	0
Radishes doz. bunches	0	6	1	0
Rhubarb bundle	0	9	1	6
Savoys doz.	1	6	2	0
Sea-kale basket	2	0	3	0
Shallots lb.	0	6	0	0
Spinach bushel	3	0	5	0
Tomatoes doz.	0	0	0	6
Turnips bunch	0	6	0	0
Vegetable Marrows doz.	0	0	0	0

WEEKLY CALENDAR.

Day of Month	Day of Week.	MARCH 9—15, 1871.	Average Temperature near London. Day.	Night.	Mean.	Rain in 43 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
						Days.	m. h.	m. h.	m. h.	m. h.	Days.	m. s.	
9	Th	Meeting of Royal Society, 8.30 P.M.	49.2	31.1	40.1	12	31 af 6	51 af 5	0 af 9	51 af 7	18	10 46	68
10	F		49.6	31.6	40.6	16	28 6	53 5	22 10	12 8	19	10 30	69
11	S		49.1	32.2	40.7	19	26 6	55 5	45 11	36 8	20	10 14	70
12	Sun	3 Sunday in Lent.	50.4	32.2	41.3	21	23 6	57 5	morn.	3 9	21	9 58	71
13	M	Meeting of Royal Geographical Society.	50.4	34.0	42.2	15	21 6	58 5	6 1	39 9	(	9 42	72
14	Tu		50.8	34.4	42.6	20	18 6	0 6	22 2	23 10	23	9 25	73
15	W	Royal Horticultural Society, Hyacinth Show, Fruit, Floral, & General Meeting.	50.6	33.6	42.1	21	16 6	2 6	29 3	17 11	24	9 8	74

From observations taken near London during forty-three years, the average day temperature of the week is 50.0°, and its night temperature 32.7°. The greatest heat was 67°, on the 19th, 1826; and the lowest cold 7°, on the 10th, 1847. The greatest fall of rain was 0.68 inch.

POTATOES.

HAVING disposed of the Yankies, and waited to see if anyone had a word to say for them, and having had my opinion confirmed by so good an authority as my friend Mr. Rivers (I may add, by Mr. Radclyffe as well), I must now have my say on the English varieties I have tried, and here I get into troubled waters. I wish to be fair and impartial, to "nothing extenuate or set down aught in malice," but withal it is not easy. There is, first of all, an immense confusion in the nomenclature of the varieties. There is, secondly, the confusion created by Potatoes receiving names as distinct sorts, when they are only selections; and there is, thirdly, the undeniable fact to battle with, that soil, situation, and climate make such radical changes that it is almost impossible to predicate positively concerning many varieties.

With regard to nomenclature, it is remarkable how the same variety receives different names in different localities, and very often in the same locality; thus I believe that Webb's Imperial, Dawe's Matchless, and Glory of England are one and the same Potato; while round Potatoes have an infinite number of names. Great confusion arises also in this way—a gardener in a neighbourhood has taken great pains with his Potatoes; he acts on the principle of selection, saves only good seed, and at last obtains a superior stock; this becomes known, his neighbours get it, and, having no better way of marking its distinctness, they add his name, and then by-and-by the original name is lost, and the gardener is best remembered. He leaves the neighbourhood, little thinking that his careful culture has added another element of confusion. I will take one example: when Mr. T. C. Sage was at Sir Edward Dering's, in this neighbourhood, he paid much attention to Potatoes; he obtained a good strain of Myatt's Prolific, he carefully selected his seed, and at last obtained the very finest strain of that variety I have ever seen. Several in this neighbourhood have obtained it; to distinguish it we have marked it Sage's strain. Well, Mr. Sage has, unfortunately, left the neighbourhood, and by-and-by we shall, I venture to say, find this kind called Sage's Prolific, or some such name; and possibly it may eventually fall into the hands of some grower for sale, who, ignorant of its history, and believing it to be something new, may send it out under that or some different name. It will be seen, then, from the tenor of these remarks, that I do not believe that one-third of the new, or so-called new, Potatoes are seedlings, but selected strains. Of those that are seedlings, amongst Kidney Potatoes I believe we may trace a good deal of the Fluke and Ashleaf strain, and that where this cross has been made, the more there is of the Ashleaf and the less of the Fluke, the better the Potato will be. Instead, then, of entering into descriptions of those numerous varieties which I have grown, and a great many of which I shall never try again, I shall merely select such as I have thought ought to have something said of them; and, first of all, as I believe, *facile princeps* amongst Potatoes

The Lapstone—A cross between Myatt's Prolific and the Fluke, I should say three parts of the former and one of the latter, deriving from the former its earliness, and to some extent its delicacy. It is a Potato that will only thrive in good soil. Mr. Douglas, who can grow anything that will grow at all, says that about Ilford, Leyton, &c., they cannot grow it. I have found it do best in garden soil, although I have known it grown successfully in fields, but then the soil was good; it will not thrive in very light or very heavy soil. It is not a poor man's Potato, but I know none that can compare with it for a gentleman's table.

Carter's Ashtop Fluke is a very handsome-haulmed Potato, and the tuber is well shaped, but it has, to my taste, too much of the Fluke; many would not consider this an objection, and would be inclined to give it a trial.

Headley's Seedling, or Headley's Nonpareil.—This was sent out last season by Mr. Alfred Fryer, of Chatteris, and this season by an eminent London firm. I was inclined at first to think very highly of it, but have modified my opinion. I have detected a twang in it which does not please me, and tasting it the other day at my friend Mr. Banks's, I noticed the same again. I am sorry, for it is very handsome and prolific. For general use I am sure it must be a favourite.

Royal Ashleaf.—This is probably a selected strain of Myatt's, raised by J. Ashwin, Esq., and Mr. Rivers having carefully grown and selected the stock, it is now better known as Rivers's Royal Ashleaf. It is an early Potato, better in some soils than others. Mr. Radclyffe is a warm advocate for it, but I prefer Myatt's Prolific, which comes in about the same time.

Haigh's Kidney.—This has been sometimes strangely given as a synonyme for the Lapstone; it is not so, although raised, I believe, by the same man—Major Haigh, a shoemaker (not a military man), in Yorkshire. It is later than the Lapstone, not quite so good, but withal a very excellent Potato, and follows the Lapstone.

Yorkshire Hero.—A very handsome light-skinned Potato of which my friend Mr. Radclyffe thinks very highly. It is unquestionably a good Potato. Unfortunately I had a poor crop of it, and saved it for seed, the greater portion of which I lost by frost.

Myatt's Prolific.—Of all the early Potatoes I have tried none can compare with this, and a good many which come out under various high-sounding names are, I fully believe, only strains of it, modified somewhat by soil and situation. I have never seen so fine a strain of it as that to which I have already alluded as being in Mr. Sage's hands at Surrenden. In flavour and appearance I place it at the head of all the early kinds.

Webb's Imperial, Dawe's Matchless, Glory of England.—These are one and the same, I believe. It is a Potato which with many persons holds a very high place, very prolific, attaining a large size, and handsome in appearance, but I could never see that it possessed the first requisite of a good Potato—fine flavour. It will, however, in many

soils, from its greater hardiness, take the place of the Lapstone.

Red-skinned Flourball (Sutton's).—An enormous cropper, and a very large even-sized round Potato, too large for steaming purposes, but a good Potato for baking—better for this than any I know, except one, the name of which escapes me, which I had sent me some years ago by Mr. Thomson, then of Archerfield. Those who like a "baked tater" will be glad to grow this.

Beaconsfield (Turner).—A very handsome Potato, similar in appearance to Headley's Nonpareil, and evidently of Fluke origin. I tried it for some time, and felt inclined to rely upon it for a main crop; and where the Lapstone cannot be grown, it will be found very useful.

Harris's Nonpareil (Cutbush).—A handsome and well-flavoured Kidney Potato, a very good cropper, and apparently tolerably hardy in constitution.

King of Potatoes.—I have never been able to grow this Potato to give me any satisfaction, yet I hear it constantly praised as a fine variety.

Paterson's Victoria.—I again tried this Potato this year, as so many wondered that I could not give a better character of it, but I am unable to alter my opinion. To me it has a coarse flavour; it is well-suited for field culture and for market-gardening purposes, but I should not care to grow it for my own use. It is very prolific, and the tubers are very close home round the haulm.

Blandford Kidney.—Already grown under other names. It did not do well with me, so that I am unable to speak of its merits.

Bryanstone Kidney, raised at Lord Portman's at Bryanstone, near Blandford. Mr. Radclyffe sent me two tubers of it, but, as I said before, everyone of them went bad, so I have had no opportunity of testing it. My friend thinks highly of it.

Prince of Wales.—To the pigs, if they will eat it. Questionable if they have any taste.

Dunbar Regents.—Of all late round Potatoes, this and some other strains of Regents I consider to be the very best. A good cropper, good in flavour, and floury, suitable for most soils, and likely to please most palates.

Such are the notes I have made. I am prepared to find them controverted, for tastes differ, and localities affect different varieties, but they are honestly made from my point of view. I have received one or two kinds this year which look promising—Carter's Main Crop, a very smooth-looking, round red Potato, with very shallow eyes; and Cambridgeshire Kidney, from the same firm, which looks well; but I have now done with trials of Potatoes. I am contented, for my own growing, with Myatt's Prolific, the Lapstone, Haigh's Kidney, and Yorkshire Hero. And I have found about here a very dark-purple Kidney Potato which promises well, and seems to come in very late. For kitchen use I should take Headley's Nonpareil, Red-skinned Flourball, and Dunbar Regents.

Since the above was written I have seen Mr. Lewis's note on Early Rose. I pride myself on having Potatoes well cooked, and although I think better of Early Rose than of any of the other Yankee notions, yet in wet seasons and close soils it will not do.—D., *Deal.*

ASPECT FOR TEA ROSES.

As the articles concerning Roses which so frequently appear in "our Journal" are principally from the pens of amateurs, so the advice given is not always applicable to the practice of the professional gardener. The amateur, controlling and frequently doing much of the work of his garden himself, is more likely to advocate a system of culture or management best suited to his own taste or convenience than one adapted to the numerous requirements of a large garden. The truth of this reasoning has lately been exemplified in some communications on Tea Rose culture, one writer preferring an east wall to train his plants to, while another cares for no wall, but thinks an open bed best. Both methods may be very good, but neither is sufficiently comprehensive for practical purposes.

All who have had much work with the regular routine of dressing vases and maintaining a supply of cut flowers, must be aware of the great value of Roses, and especially of the classes known as Tea and Noisette Roses, for such a purpose. In order to have a supply of these desirable flowers as long as possible, it has been my practice to plant some of the same kinds against walls facing all sorts of aspects. Thus, I have had such kinds as Gloire de Dijon and Souvenir d'un Ami on walls facing north, south, east, and west, some plants being fully exposed to sun and wind, others somewhat sheltered by surrounding trees, and I have even planted them in obscure corners partly shut in by trees, so that I could be tolerably certain to have some of these charming flowers throughout the season for bouquets and vases.

The culture of Roses is so simple and easy that it is surprising they are not more grown than they are. Many an outbuilding or wall might have its naked unsightly surface turned to good account for such a purpose. All that is necessary is care in guarding the plants from blight or insects, protecting them in very cold or exposed situations in winter, and affording them a sound rich soil and generous treatment, for the Rose is a regular gourmand, thriving best under a liberal regimen of fat manure and rich liquids. Unlike the animal glutton, it never becomes so obese as to appear unsightly; on the contrary, its stout rampant shoots clothed with luxuriant foliage yield a proportionate profusion of magnificent stout-petalled flowers.

This high feeding can only be practised where there is plenty of wall space on which to train the luxuriant growth; where the plants are in confined situations the reverse of this treatment must be applied. In the latter case I would advocate an almost starvation system, only giving the plants just sufficient nourishment to keep them healthy, the aim being to secure miniature plants which will afford a supply of those pretty little flower buds so useful to intermix with larger or expanded flowers in bouquets.

But apart from the great usefulness of the flowers for such purposes, Tea Roses have many valuable properties, entitling them to a high rank as decorative plants. In the choicest varieties much elegance of form, both in foliage and blossom, refinement of colour, and delicacy of perfume are developed. The flowers, too, are produced so freely and continuously, that Tea Roses might be styled the Perpetual Roses with more justice than the class now known as such. Let us not mind about aspects, then, but rather try to utilise every spare foot of wall space in the production of flowers so charming, so useful, and, above all, of such easy culture.—Edward Luckhurst.

THE EARLY VINERY—GRAPES IN POTS.

The Early Vinery.—So much has been written on this subject that I cannot be expected to bring anything new to light, but I will just note a few facts which may assist the amateur. While Grapes may be grown in any glass structure, there are certain forms of structure most suitable for producing given results, and early Grapes, by which I mean Grapes ripe in April.

Our early vinery, which I had built, has given me great satisfaction. It has at one end an Orchid house, at the other the late vinery, so that it is well sheltered from cutting winds. It is 14 feet wide, has a front sash 2 feet in height, and the back wall is 14 feet high. There are four 4-inch pipes round the front and ends, and one 4-inch pipe at the back wall; every sash on the roof is moveable, so that an inch opening can be left for air at the top, and the same in front. I never give air in front until colouring commences. The wires to which the Vines are tied are not nearer the glass than 15 inches, so that in hot weather a current of air passes between the foliage and the glass. The leaves should never come in contact with the glass, for when they do I have seen them frosted in a clear cold night, and turn yellow. I have over one of the pipes troughs or steaming-trays, which are kept full throughout the growing season; these steaming-trays afford moisture to the air of the vinery, and warm water for syringing.

Our late vinery is the same as the early vinery, only there is one 4-inch pipe less in the front. It is 14 feet wide; there is at back a 4-feet path of York pavement, and the border is 10 feet wide inside, and 10 feet outside.

The soil of the border was taken out to the depth of 2½ feet at the back, and in the outside portion 3½ feet, and there is a drain at the bottom 4 feet deep. The bottom of the border was made on a uniform slope, and paved with bricks, among which thin cement was brushed into every crevice. On this were built the pillars upon which the arched front rests. Above the pavement was put a foot deep of brickbats, the smallest being kept at the top; then a little lime rubbish free of dust, and on this turves 2 inches thick, grass side downwards. The compost I used was principally formed of a friable loam, which had been stacked six months; this was broken up while dry with a spade or fork, and mixed with half-inch bones

at the rate of half a hundredweight to the cartload, some charcoal, including wood ashes, and one cartload of old lime rubbish, and the same proportion of leaves, not too far decayed, to every ten cartloads of soil. This, then, is the soil in which my Vines grow. Our soil being light, I made my border under the general ground level rather than above it, as is sometimes seen. Of course, if my soil were clayey I should have made the border above ground. Ours at the highest point, just inside the front wall where the Vines are planted, is only 1 foot higher than the ground level. I should also advise means of affording bottom heat to be provided, but not for amateurs, as with them cost is a great consideration.

Grapes in Pots.—I propagate my pot Vines two years before they fruit; the eyes are selected from the early vinery, as such start into growth with more freedom and with less artificial heat than if taken from later-forced Vines. Six eyes are placed in a 6-inch pot, and plunged in a Pine pit with a bottom heat of 80°, while the temperature of the atmosphere is between 55° and 60°. As soon as they have made three leaves they are potted singly in 4-inch pots, and when the roots have covered the ball of earth the Vines are removed into 8-inch pots, which will suffice for the season. The soil used in propagating consists of equal parts of leaf mould and light loam, pressed into the pots firmly to prevent its absorbing much water.

The plants are placed in the early vinery, and the shoots trained to the wires. By the 1st of October the wood will be ripe enough to admit of the Vines being placed in the open air, and, by the end of the month, to be cut back to two eyes. All the care afterwards required till they are again taken to the forcing house will be protection from frost, and affording a sufficient supply of water to prevent the rods from shrivelling. I have tried many composts, but for the cultivation of pot Vines I prefer the same soil as that used for borders.

At the commencement of the second year the pots are first thoroughly soaked with water and set upon the hot-water pipes. The buds will begin to start in the course of a month, when the weakest are rubbed off; the remainder will grow strongly, so that at the point where the old and young wood join roots are freely produced. I then have the Vines shifted into the fruiting pots, which are about 14 inches in diameter, sinking the base of the young wood a little below the surface of the soil. The depth of drainage is about 2 inches, one half of it being half-inch bones. In repotting, the loose roots are extended towards the outside of the pot. The soil should be warm, moderately dry, and pressed sufficiently firm, but not so much so as to prevent the water from passing off freely. The pots are replaced on the hot-water pipes, and the Vines trained to the wires, the laterals being removed when they begin to overgrow the bud. During the season of growth I supply liquid manure twice a-week, and the guano used is just sufficient to colour the water, which is applied warm.

By this treatment I produce shoots 14 feet long and 1½ inch in circumference, and have them ripened by the 1st of July. They are then placed out of doors in a north aspect to give them all the repose that the season will allow, and they receive whatever pruning may be required.

The Vines are brought into the house in November and well watered, the surface of the soil in the pots being covered with sheep dung. I use an atmospheric temperature many degrees higher than that which is necessary in ordinary cases, so I start with 65° by day and a night temperature of 55°, and maintain the same uniform heat till the buds begin to move, when the temperature is reduced to 60° by day and 55° by night. This may be thought excessive, but it is no more than enough in November. I usually take from six to eight bunches from each Vine, averaging about a pound weight. During the swelling period the Vines are well supplied with guano water, a good handful of guano being placed in a four-gallon watering-pot, which stands on the pipes so as to keep the water warm. A good watering of this is given once a-day until the berries commence to colour. I stated in my former paper (see page 97) the sorts which I grow, and therefore it is unnecessary to notice these further than to mention my reason for forcing late Grapes. I have found Lady Downe's when so forced hangs longer than any other Grape in an early vinery, so it just comes in with the Muscat of Alexandria in August, as we like to have black and white at the same time.

General Management of Permanent Vines.—In our early vinery we have Hamburghs ripe to succeed those in pots. I start the Vines in December, watering with water quite warm, and it is by no means a small quantity which they require, as four 4-inch pipes 6 inches from the surface dry up the border considerably, and when one would fancy enough water had been given, at 6 inches below the surface the soil will be found dust dry; therefore, those who have Vines planted inside should be careful that the water passes down to the drainage, before concluding they have given enough. I do not surface-dress the border inside until I am sure the water has reached every root. The outside border takes care of itself. I have not so much as covered it yet, as the roots are still inside; when wanted in the winter dry leaves thatched with straw make a good covering for outside borders. I surface-dress inside with sheep's dung and half-inch bones. This dressing, the abundant waterings, and the four 4-inch pipes 6 inches from the surface, suit the Vines well. I once a-day damp the house with liquid from the stable tank. This is done early, so that all bad smell is gone by noon. Of course I am careful that the liquid does not wet the foliage of the Vines or other plants. The benefit it does is very great, apparently in consequence of the ammonia which it sets free in the atmosphere of the vinery, the leaves becoming dark green, and a leaf of Lady Downe's which I measured last summer was 15 inches wide. I do not approve of the young wood being too strong; from 1½ inch to 2 inches in circumference I call strong.

As already stated, the steaming-trays are kept full, damping the paths, &c., and air is given as early in the day as the weather will permit, shutting up early in the afternoon. I am not afraid even if the temperature of the house be 100° in the afternoon, but a little air is admitted all night. Vines started early should have the buds thinned, and as soon as the bunches can be perceived in the points of the shoots they should be thinned, and the berries also immediately after flowering. There is no greater error, when endeavouring to secure well-finished Grapes, than cropping too heavily, especially in very early forcing. I grow my Vines on the spur system; and as quality, not quantity, is the aim, only from ten to twelve bunches are allowed to remain. I stop the shoot one leaf beyond the bunch, and when it grows again I stop at the next leaf, and so on, and the same course is pursued with lateral shoots, taking the point out as they make another leaf.

I have grown Vines on many different systems, but this I consider the best. I have, after the first stopping, allowed all the laterals to grow, but this I consider untidy. I have also not allowed a leaf or lateral to make its appearance after the first stopping. Neither plan is bad, for I have seen splendid Grapes with no stopping, and so I have with severe stopping.

I recommend that the colouring should be a slow process, plenty of air with a little fire heat being given. I protest against the barbarous system of pulling off Vine leaves to let the sun play on the bunches, to ripen them as it is supposed. I would never take off a leaf until it ripened and fell off naturally. I know this recommendation is contrary to the advice of many Vine-growers, but I have proved that the practice is wrong, for I have seen bad results follow.

I have said nothing of diseases, such as shrivelling, rust, spot, bleeding, insects, and mildew, each of which would take a paper to itself.

In referring, at page 97, to the importance of a damp and dry atmosphere, I meant the troughs to be kept full of water; as printed, the sentence reads *not* full.—C. M. McCrow, *Nash Court, near Faversham.*

VERBENAS ATTACKED WITH SPOT OR RUST. VINE BORDER.

"S. W. J.," whose inquiry is on page 139, will find nothing like a mild hotbed for his Verbenas. A few years ago I had the misfortune to have a fine lot attacked in the way described; as I used Verbenas largely at that time, it would have been a misfortune to have lost them, and having an idea that a hotbed would bring most of them round, I prepared for them a pit that was heated with hot water, filling it with leaves, well trodden down, to within a foot of the glass. Before placing the plants in it I had them gently rapped out of the pots, and the crocks removed and replaced with pieces of charcoal. The plants were then returned to the pots, and those most affected dusted with lime; next day they were well syringed with warm water; they were then kept close for a week, and afterwards the syringe was used freely, giving a little air in fine weather. In about a month I found I had managed to save about one-half of the plants, and these were growing very freely; indeed, I had more cuttings than I wanted. I let a few of them grow,

and by the middle of March was rewarded with some fine potsful of flowers, which I had neatly tied-up to four sticks placed at the edge of the pot, with three rings of matting run round, in the same way as for Mignonette. Since that time I have used 32 instead of 48-pots, for striking, putting a cutting in a pot, using charcoal instead of crocks for drainage, and placing over the charcoal rough pieces of leaf mould till the pots are three parts full. I then fill up with white sand and sifted leaf mould in equal parts, and place the pots in a hotbed till the cuttings are rooted; afterwards I keep them in a cold frame till the pit is ready to receive them again. The pit, after having been emptied of the old leaves, which were then well decayed, was refilled with fresh leaves as soon as they could be collected; on these the pots were placed, and enough fire heat given to keep out frost and cause a circulation of air in dull weather. I quite agree with Mr. Robson, that failing a heated pit, there is no place so suited to the Verbena as a shelf in the vinery.

I find Verbenas, when bedded-out, thrive best in a clay soil enriched with good rotten dung in the autumn.

I have my suspicion that the cause of the disease in some instances is watering with water containing iron.

I grow a fine lot of Cucumbers in the pit after the Verbenas are taken out, by putting a ridge of good loam along the middle, on the leaves, and planting one good plant under each light.

In reference to "W.'s" report on the state of his Vines, I should adopt his second method, and, if possible, make a narrow border inside, planting young canes between the present, and in, say five years' time, entirely doing away with the old ones. He could then make or remake the border and plant under the rafters as usual, growing the Vines planted inside for a crop till those outside could take their place.—W. Clark, *Cheshunt.*

PLUNGING POTTED CHRYSANTHEMUMS.

I have noticed recently in the Journal a discussion on some of the details of the culture of the Chrysanthemum, and that special reference has been made to plunging the pots during the summer months.

The subject of plunging or not plunging pots containing growing plants is of more interest and importance than is apparent at first sight. People have arrived at the conclusion that if the pots are plunged much less water will be required, consequently there will be a great saving in labour, and that the ultimate result will be the same. But if the matter be patiently and carefully investigated it will be found that the roots formed in a pot that has been plunged are of a very different class from those formed in circumstances where the sun and air have been allowed to play freely around and underneath the pot; and an experience of some years has led me to the conclusion that flowers and fruit of better quality are obtained from plants and trees which have not been plunged than from those which have been so treated. I am alluding now more particularly to orchard-house trees and Chrysanthemums or other flowers which we find necessary to accommodate with a position out of doors. Even in Pine-Apple culture there is difference of opinion on this matter. Happening to call recently on a neighbouring gardener, I noticed that the pots in which his Pines were growing were not plunged in the tan bed, but merely standing on the surface, and on calling the attention of the gardener to it he informed me that he did not plunge the pots, as he thought better fruit was produced when they were not plunged. Again, if Vines are required for planting out or fruiting in pots, it is better not to plunge the pots during the growing season. Of course the eyes ought to be struck in bottom heat, but after the plants are repotted they should not be plunged again, but be placed in a position where heated air can have free access underneath and round the pots; and if the plants be afforded a high temperature and be freely supplied with water there will be no difficulty in growing canes of the strongest description, which will carry a large crop of fruit the first year from the bud; the class of roots formed will remain in better condition during winter, and be better prepared to start into active growth in the succeeding spring.

My experience with the Chrysanthemum has been somewhat extensive and varied, for I have had to cultivate it both under adverse and prosperous circumstances. The system pursued here with plants which are grown for the quality of the flowers is to place the pot upon two bricks so that a current of air may pass underneath it, and plants which are grown for specimens are likewise not plunged. The Chrysanthemums here are grown for exhibition, and, as a matter of course, much attention is bestowed upon them. They are not allowed at any time during the growing season to suffer from want of water. If the pots are plunged the roots sometimes find a way through the holes in the bottom, ramify into the surrounding material, and when the plants are removed into the show house or conservatory in autumn the most useful portion of the roots is destroyed; the plants consequently experience a check from which they do not recover until it is too late for the flowers to benefit, and the quality of these is much deteriorated. I had a decided proof of this last autumn. At the exhibition of the East London Chrysanthemum Society in three of the classes prizes were offered for Pompons, and in every one of the classes the first prize was awarded to plants which had been grown in pots that had never been plunged, and the superior quality of the flowers was at once apparent. The plants were not so large as some of the others of which the roots had not only been allowed to grow through the pots, but in some instances the lower branches had formed roots, the result of such treatment being immense plants out of all proportion either to the quantity or quality of the flowers upon them. On the other hand, some exhibitors who have had much experience recommend plunging the pots during the growing season. If the plants are grown in this way there will be a considerable amount of labour saved in watering if a dry season should set in. Due precautions should also be taken to prevent the roots from growing through the pots to a large extent. In the case of amateurs who do not employ a regular gardener, and whose business occupations call them away from home during the day, plunging the pots would be absolutely necessary to enable the plants to withstand without water a sultry day in summer.

There are very few gardens where this native of China and Japan is not cultivated, and any practical details concerning it must therefore be useful to a large circle of readers. We have not heard much about new introductions this season. Readers of the Journal must have missed the usual annual report of Messrs. Salters' nursery at Hammersmith, which was of great value to those who could not make it convenient to go and judge for themselves.—[The nursery has been destroyed by one of the new metropolitan railways.—Eds.]

There is still room for improvement in all the different classes of Chrysanthemums. Of the Pompon varieties there have been very few new sorts introduced of late years. In this class the form of the individual flowers has been brought to great perfection, but there is still room for improvement in the habit of the plants. Amongst the large-flowered Chinese and large-flowered Anemone varieties many new and improved forms have been introduced of late years, but it was evident that with the Messrs. Salter the Japanese varieties, with their singular and fantastic forms, were occupying the largest share of attention. The improvement has been very rapid, and continuing, as the Japanese kinds do, to flower so late in the season, they are highly valuable for decorative purposes, however much they may be wanting in that which constitutes a florist's flower. I noted last season, as one of the finest flowers of its race I had ever seen, a new Japanese variety named Jane Salter, one of Messrs. Salters' flowers, and which received a first-class certificate. I hope to see others take the cultivation of this flower in hand, as there is none more useful at the time it is in bloom, nor is there any better adapted for the neighbourhood of large towns, or to flourish under circumstances where plants of a less accommodating nature would barely live.—J. Douglas.

A LESSON ON STRAWBERRY FORCING.

In my experience of the early forcing of Strawberries, I can find no better plan in order to insure a fair crop of ripe fruit in the first week of March, than to encourage the plants to make fresh roots previous to leaf growth. This may be done by plunging the pots in a shallow bed of fresh tree leaves—oak leaves are the best—of sufficient thickness to give just a gentle heat. Press the leaves very tightly round the pot to prevent the escape of heat. The bed should be made up either in a frame or pit, and where the plants can be brought to within a foot of the glass. Let them remain about a fortnight, or more if necessary, for the formation of new roots, but take care to give air the whole time. The amount of air should be regulated by the heat of the bed, and the state of the weather. Afterwards transfer them to either the Strawberry house or the shelves of an early vinery at work, where the plants can have plenty of light, and they will soon throw up strong and healthy sprigs of bloom, and when the flowers open they will be so well

supported by the newly-made roots that very few will fail to set their fruit.

Compare the above method with that generally adopted—namely, putting the plants into the house at the time of starting without any of this preparation, and if I mistake not the plants will run to foliage with surprisingly long leaf-stalks, even though they may be close to the glass, and the blossom, instead of being thrown up well above the foliage, will be almost hidden by it, and the first and finest flowers which should produce the finest fruit will turn black in the centre, and die, in my opinion through insufficient root action. I am more disposed to believe that such is the cause, from the plants setting their fruit almost to a flower after root action has fairly commenced; but the damage is done, as the later-produced fruit is always the smallest, many not being fit to place on the table. Professional gardeners have long ago learned the lesson, and while some of them have profited by it, many of them do not attach that importance to it which its merits deserve. I also wish it to be understood, that I do not think imperfect root action is the only cause of Strawberry flowers going blind, but it is a very common one, and should be guarded against by every possible means.—Thos. Record, *Hatfield.*

FRENCH HORTICULTURISTS' RELIEF FUND.

My dear friend Reynolds Hole has called me in his charming "Book about Roses" a French consul, as I have had a good deal to say from year to year as to the new Roses sent over from them to us. I now lay claim to being so in another and more important sense. For many years it has been my happiness to be much among the nurserymen in the neighbourhood of Paris, and I have spent many pleasant and profitable hours with them. It was no wonder, then, when I heard of the siege of Paris being undertaken my thoughts should naturally recur to those whom I felt must be some of the earliest sufferers from the cruel devastation which has fallen on the neighbourhood of the fair city; and when, from time to time, I heard of the destruction that had taken place—when, especially, the letter of M. André appeared in a contemporary, that I could no longer sit an idle though not an unconcerned reader of those great sufferings, I consequently wrote and suggested that an appeal should be made in their behalf. I am thankful to say that this has been most warmly taken up. The Council of the Royal Horticultural Society has seconded the movement, and everything, as will be seen by the advertisement in another column, has been put into a fair train.

I have received letters from Paris, speaking in most grateful terms of this movement, and I now desire to make my appeal to all lovers of gardens to aid in this good work. I know you have all, my good and kind readers, done your part already. I know but little of the whole race of gardeners, professional and amateur, if they have not been already contributors to some of the many agencies at work for the relief of French distress; I do not want to divert, God knows, one single rill of that mighty stream of charity which is ever flowing in our dear country, but I want to tap another spring, believing it will in no way drain the others. Imagine what it would be for your own gardens to be torn and trampled by the troops of invading armies; your greenhouses and frames pulled to pieces to make firewood of; your well-trained trees cut up to make gabions; your dwelling-houses ransacked, and then tell me, Can you refuse to help those who have thus suffered? No, I am sure you cannot, and so I rely on your kind co-operation. Let none be deterred because they can only give a trifle, for every little makes a mickle, and the few postage stamps will be as acceptable from those who can give a little only as the well-filled cheque from those who are wealthy. The cause is a good one; give for that reason. If you want another, remember that it will be only another proof of the sympathy of England, which will be thoroughly appreciated by our French friends; and may I say that if ever I have been enabled to give any information that has been either agreeable or profitable, I may ask in return that you will favour this movement? As I am ready to receive subscriptions I had better, perhaps, not use my usual *nom de plume* of "D., *Deal*," but sign myself—H. Honywood Dombrain, *Westwell Vicarage, Ashford, Kent.*

A meeting was held on Tuesday last at the rooms of the Royal Horticultural Society, South Kensington, in furtherance of the object of raising a fund to relieve the French horticulturists who have suffered from the ravages of the war. The meeting, considering the short time the matter has been before the public, was a full one, and the liveliest interest in the success of the undertaking was exhibited by those present. Mr. G. F. Wilson, F.R.S., was in the chair; and there were present Mr. Charles Lee, Mr. H. Veitch, Mr. Cutbush, Mr. Bull, Mr. Laing, Mr. Williams, Mr. Turner, Mr. Standish, Mr. Robinson, Mr. Beale, Mr. Eyles, Mr. Richards, Dr. Masters, and Dr. Hogg. M. Wauthier, of Paris, was present, representing the Société Centrale d'Horticulture.

The Rev. H. H. Dombrain, the Honorary Secretary, read several letters he had received from Paris relating the great suffering our fellow horticulturists had undergone, and the total destruction of property which many of them had sustained by the late war. He also stated that he had been in communication with the Lord Mayor with the view of participating in the Mansion House fund, and that his application had met with a favourable reception; but the meeting were strongly of opinion that before any aid could be expected from that fund the horticulturists themselves should make a special effort to alleviate the sufferings of those in whose interest their sympathies had been excited.

Several subscriptions, varying in amount from 1s. to fifty guineas, were announced as having been received, and these, together with those contributed by the meeting, amounted to no less than £261 14s. The following deputation was appointed to wait on the Lord Mayor at the Mansion House—Mr. Wilson Saunders, Mr. Marshall, Mr. G. F. Wilson, Dr. Hogg, Dr. Masters, and Mr. Harry Veitch.

We have already stated how cordially we approve of this movement, and we trust that all our readers, however limited their means, will to the best of their ability unite in trying to alleviate the distress of those industrious and innocent sufferers, many of whom are known to us as personal friends.

A large number of circulars has been printed for distribution, and the members of the nursery and seed trades in the provinces are earnestly invited to lend their co-operation by circulating them in their several districts. Any quantities that may be required can be had on application to the Secretary, Rev. H. H. Dombrain, Westwell Vicarage, Ashford, Kent.

DOUBLE-FLOWERED PELARGONIUMS.

Mr. C. M. McCrow, in page 63, asks for the results attendant on plunging the above in borders, and I have much pleasure in communicating my experience. During the last two summers, I have tried the plants in borders with and without pots, and much prefer them in the latter. Last autumn I took up twenty plants from borders, placed them in pots just large enough to admit of the roots being crammed in, and set them in the same house as my autumn-struck plants, and although I lost upwards of a thousand good Pelargoniums through frost, only two of my old plants perished, and I could now take nearly one hundred good cuttings. I may add that the bloom of the plants not kept in pots was much finer than that of the others, and the plants did not require water in the summer, as they rooted very deeply.—J. Wallis.

PRESENTATION OF A TESTIMONIAL

TO MR. ROBSON, GARDENER TO VISCOUNT HOLMESDALE, M.P.

The Editors and the many readers of The Journal of Horticulture will be gratified by knowing, that their old and much-esteemed friend, Mr. Robson, late President of the Maidstone Gardeners' Mutual Improvement Association, was presented with a handsome and valuable testimonial by the members of the above Society and their friends, on Wednesday, March 1st, at the Rose and Crown Inn, Maidstone.

Mr. Frost, the well-known nurseryman (the President for this year), took the chair. Mr. Davis, the founder, and father, as he is commonly called, of this prosperous Institution, occupied the vice-chair. The members in all, including honorary and ordinary, amount to over four hundred. A great number were present on this occasion, many of them from a long distance. The Chairman in modest but appropriate terms spoke of Mr. Robson's well-known high qualities both as a gardener and private gentleman, setting forth in no exaggerated measure the desirability of commemorating in some slight way the valuable services of Mr. Robson, not only to the Maidstone Gardeners' Society, but to all gardening and gardeners.

The testimonial was then handed to Mr. Robson by the Chairman. It consisted of an elegant gold watch with a suitable inscription, a massive gold chain, a purse of sovereigns, and a book beautifully embellished with the names of the sub-

scribers to the Robson Testimonial. Mr. Robson, who seemed much affected by the kindly feeling evinced towards him by all present, returned warm thanks to all, dwelling on his own undeservedness of such a mark of esteem as he had just received. —A Gardener, one of the Committee of the Society.

CULTIVATION OF THE JONQUIL—RAISING CONIFERÆ FROM SEED.

Fashion is a great power, ruling the gardener as well as the milliner. At the present time spring flowers are as much the rage as bedding plants were a short time ago, and it might, therefore, have been expected that the Jonquil would have resumed the place it occupied among our floricultural forefathers; yet it is but seldom seen now-a-days in English gardens or English forcing houses, and, judging from my own experience, I believe the reason to be that its proper mode of cultivation is very generally unknown. After many years of failure I have at last met with success, and it may interest some of your readers to learn how it is to be attained.

The largest and best Jonquil bulbs, offered by seedsmen with other bulbs in September and October, cannot be made to flower decently in the following spring, either in-doors or out, by any method I have seen tried, and my gardener has tried everything he or I could think of. If planted in the open ground they will produce their leaves in the following spring, and a spindly flower here and there early in the summer, but if the bed has been deeply dug and well manured, and the Jonquils are left untouched for a couple of years to establish themselves in it, they will throw up their leaves in the autumn, and when they do this they will bloom profusely in the following month of April, and scent the whole garden. The leaves should become yellow in the month of June or July and die off; roots then transplanted will produce leaves and flowers in due season. The leaves show six months before the flowers, but they are perfectly hardy, and remain untouched by the winter's frost.

For forcing, the larger bulbs should be potted as soon as the leaves have faded, and the pots should be plunged in a cold frame till November, when the young leaves will be 6 or 8 inches high. Brought into the forcing house in succession they can be bloomed throughout February and March. I have no doubt that a similar mode of treatment would answer admirably with Polyanthus Narcissus, and though I have not yet tried the experiment, I mean to do so next season.

I want the advice of some one of experience in the following matter. In the case of Cedars and other large-seeded Coniferæ the number of plants I raise, as compared with the number of seeds I sow, is exceedingly small. Of course there is always a certain proportion of bad seed that does not sprout at all, but where the seed does germinate it seems a mere toss-up whether the extension of the stem forces the rootlets or the cotyledons out of the ground, while even when the cotyledons come up properly they are often strangled by the hard seed shell, from which they are unable to disengage themselves. I usually sow on the surface of a prepared bed, and cover with a light sprinkling of leaf mould, but I have tried deeper sowing without any lessening of these freaks of Nature, while there was, of course, a smaller per-centage of germination. A word from the wise in this matter would be much esteemed by—A. B. C.

ICE versus GLASS, AND OTHER THINGS.

Mr. Pearson advocates narrow glass. I am sure he is wrong. This winter has been a trial, if there ever was one—fierce frost, fiercer snow, fiercest wind, and yet I have not lost a single pane of either the 25 inches or 20 inches wide, but several of the 9 inches. The reason is evident; the wide panes spring, and the freezing at the laps does no harm. Then, the snow slides off the wide glass, whilst the rafters keep hold in the case of narrow panes.

Then about leaving potted trees out of doors in winter, I do not think it is a matter of any consequence, provided the soil in the pots has been kept dry during the autumn, and is also safe from frost. I have at present two long walls of piled seedling Peaches, and they seem to be perfectly safe; but two or three strong old trees left out through neglect have been cut to pieces, ripe brown two-year-old wood looking as if it had been boiled.

Then some one advises a correspondent to empty his hot-water pipes frequently in order to avoid "furring." Now, if there is lime in the water, the heat drives off the carbonic acid that held the carbonate of lime in solution, and down goes the lime, leaving the water so much purer; therefore, in such case, as little fresh water as possible should be put into the pipes. But why not say at once, Use rain water invariably for filling the pipes?

I see we are likely to have a good deal of aphis this year, for in spite of thorough washing as soon as the leaves fell, and again before starting, I have had beginnings on almost every tree; but, of course, I do not allow a day to pass without snuffing out any such visitors as may appear; last year I hardly ever saw one, certainly none till they came in from the outside.—W. Kingsley, *South Kilvington.*

Thanks to "R. F." (page 49), and to Mr. Pearson (page 63), for their excellent remarks on the subject of an evil at all times annoying to the gardener, and especially in winter. The breakage of glass is never agreeable, attended as it is with a considerable amount of drip, to say nothing of the trouble, annoyance, and cost of repairs.

Of the causes of glass cracking from frost, I consider "a wide lap" the chief, and I think sole one. Size of pane has no influence whatever on the liability to breakage by frost, the breakage being entirely dependant on the capacity of the lap for holding water, which in severe weather is converted into ice. The greater the lap the more water will lodge between the panes where the one overlaps the other, and the greater will be the quantity of ice, and consequent liability to breakage. This has never been better exemplified than in the present year. We have two Peach houses glazed with 26-oz. sheet glass, in panes 40 inches by 17½ inches, and the lap is one-eighth to three-sixteenths of an inch, in no case exceeding a quarter of an inch, and not one pane has cracked; but in some pits with the panes 15 inches by 11 inches there are several panes cracked from frost, because the laps are more than double the breadth of those in the Peach houses. Again, in a greenhouse, with panes measuring from 24 to 30 inches by 12 inches, there is none cracked by frost, for the lap is as nearly as possible a quarter of an inch; but in some vineries with panes which may be 12 inches by 9 inches, the breakage is very great, for the laps are not less than half an inch, and some three-quarters of an inch.

Thick glass, as Mr. Pearson says, is no safeguard, for it will break just as quickly as thin, if the lap is so great that water lodges in any considerable quantity. I have known quarter-of-an-inch rough plate broken by frost quite as extensively as 15-oz. sheet glass.

Of glass annealing I known next to nothing. It is, no doubt, a very important part of glass manufacture. Some glass I know is very inferior; but is not inferior glass, presuming it is properly annealed, more suitable for horticultural purposes than the best? For instance: Is not 3rds quality, 21-oz. British sheet at 4½*d.*, superior to the best quality at 10*d.* per superficial foot? The liability of the best quality of glass to scorch the foliage beneath it is said to be so great, and the expense so much more, that it is rarely tried, and where it has been tried it is considered disadvantageous. This being the case, is it not folly to glaze with more than 3rds quality glass? If the 3rds or 4ths qualities are so badly annealed as to be very liable to crack, or must all crack, as Mr. Pearson says, would it not be better, instead of using a better quality of sheet, to use rough plate three-eighths or even half an inch thick, which for squares containing 9 feet will not cost more per foot than the best quality 26-oz. sheet? Cheap glass is, in my opinion, a great evil, and especially thin glass, which I consider occasions a great loss of heat. The object of all glass is the retention of heat accompanied with the transmission of light to the plants, fruit trees, &c., enclosed; and the cooling of the enclosed atmosphere is dependant in a greater measure than many of us suppose on the thickness of the glass. Rough plate three-eighths to half an inch think, I find, makes a very considerable difference in the temperature as compared to a house glazed with 21-oz. sheet—fully 5° in favour of the rough plate, to say nothing of the more equable temperature. Thick glass does not reflect nor refract more of the sun's light and heat than thin, but only causes its diffusion, and on that account prevents scorching, which is dependant more on the what we call the clearness, but in reality smoothness of the surfaces of the glass, than on its mere thickness or thinness. Polished plate a quarter of an inch thick will scorch quite as much as the best quality of sheet glass. We have in use polished plate a quarter of an inch thick, rough plate (ground on one side) three-eighths and half an inch thick, rough plate

three-eighths and half an inch thick, and sheet, 26-oz., 21-oz., and 15-oz., with crown glass, and all the breakage from frost is in the last three descriptions, none of the other four being in any way acted upon injuriously by frost. It is only right to say, that of the 21-oz. not one pane per cent. is cracked, but of the 15-oz. most, and they are the smallest panes with the greatest laps, consequently I attribute all the breakage to the laps.

A lap of any sort I consider a great evil. Laps are causes of drip, let out a great amount of heat, and in time there is formed an ugly dirty band at the lap, or where the panes meet, and this is anything but neat, and is a great propagator of moss on the glass, which obstructs not only the sun's light, but heat, to a greater extent than many imagine. Mr. Pearson condemns "jumped" joints—*i.e.*, the edges placed together; but, then, as he says, "in stormy weather a roof so glazed admits water at every joint." This statement I can confirm; for the ends of a greenhouse, to say nothing of the roof, in which the glass is so arranged, admit a remarkable quantity of water in wet windy weather. Notwithstanding, I believe it is the true principle of glazing, and though I would not advocate wider panes than 15 inches for 21-oz. sheet, I would in all cases of glazing with more than 26-oz. sheet, or with plate glass rough, or ground and polished, have no sash-bars but simply rafters, 2 feet 3 inches to 2 feet 6 inches apart, for 32-oz. sheet and quarter-inch plate, whilst for three-eighths and half-inch plate I would have the rafters with 3-feet intervals. We have some polished plate in panes 4 to 5 feet, by 3 to 4 feet, and they are in appearance very much superior to those of which four would be required to make one of the other. The glass I would have half as long again as wide, and divide the lengths so as to have the panes equal in size. Where the panes met directly I would have a chamfered cross-sash but without the rebates, having it quite flat on the upper surface, and so let into the rafters that its upper surface would be level with the bottom of the rebate in the rafters, which need not be more than half an inch or five-eighths of an inch wide, and a quarter of an inch deeper than the thickness of the glass. The cross-sash need not be more than an inch wide—three-quarters of an inch would be sufficient—and should be so placed that the panes would meet exactly in its centre. Bed the glass in white lead, also the small cross-bar, and the lead will be forced through and fill-up any opening where the panes meet; and outside, over each joint, we have only to place a strip of lead-leaf no thicker than lead paper so as to cover the joint, and this being white-leaded on its side next the glass, and where it covers the joint, will endure, nobody knows how long. Outside we have continuous-"looking" glass, inside neat, French casement-like panes, no cold air blowing in, nor heated air passing out, and there is no lap for the water to pass under, consequently no ice, no frost-cracked squares. This mode of glazing would answer for smaller as well as larger panes, only if the glass be 21-oz. or 15-oz., it ought not to be wider than 15 inches for 21-oz., and 12 inches for 15-oz., and the cross sash-bar may be smaller, or dispensed with.

Mr. Pearson's preventive—namely, having the glass cut with a slight curve, I have no faith in. I remember its being lauded a quarter of a century back, and have seen more than one structure glazed in that way. It was thought it would prevent drip by taking the water to the centre of the panes, and so keep it from being blown inwards and running down the rafters in stormy weather. This mode was principally used for curvilinear roofs, but fell into disuse from the waste in cutting, the difficulty in repairing, and, as I remember, from the frequency of broken glass. Unless the lap is small there is not much difference between glass cut with a slight curve and that cut straight; both hold water enough to form sufficient ice to break glass in frosty weather. The capillary attraction of the lap is fully as great in panes cut curved as those cut straight, as regards the water under the lap, but that coming on the outside is conveyed by the upper cut-edge to the centre of the pane, and may run off, but if the lap is not full by capillary attraction, the water passes under the lap, and there remains until it is displaced by wind, or augmented by more till the weight is greater than capillary attraction will retain.—G. Anney.

CALCEOLARIA CULTURE FOR BEDDING-OUT.

I have been a successful cultivator of Calceolarias, for I scarcely ever lose a plant during the summer. I differ very much from Mr. Clark, who says, at page 137, "I insert them in large 60-pots, six in a pot, using equal parts of leaf mould, drift sand, and chopped moss, with plenty of drainage." This amount of trouble and time I should not like to expend. I use a plain wooden pit facing the south, 3 feet in depth at the back, and 2 in front; I fill it with decayed dung, placing over it 6 inches of loam beaten firmly. I insert the cuttings during the last week of September and the first week of October, keeping the boards shut down, and sprinkling every night and morning in fine weather. Should it be showery I tilt the lights and let the cuttings have the rain. It must be understood that the boards are on hinges, which makes it a very useful pit for bedding stuff, especially in the spring.

In this pit I keep my Calceolarias till the middle of March, pinching them once; then I remove them to the openest plot in the kitchen garden; there I open a trench 4 feet wide, placing the soil on each side as a bank for protection, at the same time wheeling in 4 inches of decayed dung, and forking it up with the soil at the bottom. In this I plant the Calceolarias, leaving them there till the second week of May, when I remove them to the flower garden, taking up each plant just ready to flower with a fine ball of earth; the check they receive in removing them throws them into flower. The only evil of which I have to complain is that they cease flowering so early in the autumn; and, like Mr. Robson, I should be glad if anyone would recommend some method by which constant flowering could be insured. I shall this season try cutting off the first blooms, for the plants come into flower long before the Geraniums. I should like to know if anyone has tried this method, for it would be a great boon if we could find one which would prolong the Calceolaria's flowering, for without it large flower gardens would not look much, as we have no substitute equalling it.

The varieties I use are Kayii, an old and well-known kind, and Aurea floribunda. The former is that which I would recommend to everyone who has experienced any difficulty in the cultivation of the Calceolaria; it is of strong, robust growth, and is an excellent companion to Stella Geranium. It is the variety I prefer for extensive flower gardens.

The reason I object to use glass lights over my Calceolaria cuttings is they become drawn up, and will not withstand the rough treatment they are exposed to in planting out in the kitchen garden. If grown properly they need no protection after the middle of March; a few deal boards placed across the pit will save them from the cutting wind. I have no doubt that the failures of which so many complain arise from what is called coddling, for however much air is given, the plants are always weakly under glass.

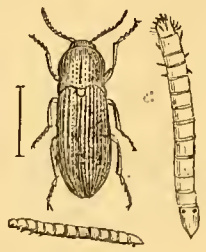
I visited a gardener friend last March, and in looking through the frames he pointed out to me the fine Calceolarias he had; they were so at the time, but they were very weak. He transferred them to a pit in the kitchen garden the same as mine, and there they received a severe check, but he brought them through it, and planted them out in the middle of May as fine plants with good balls, but in July he had not one-half of them alive, and his ribbon borders were consequently disfigured. For this reason I condemn glass lights for the growth of the Calceolaria, and anyone trying a boarded pit will find himself on the right side.—E. Eames.

SOME PREDATORY INSECTS OF OUR GARDENS.—No. 4.

Certain persons when they found that the worthy gentleman Mr. Micawber purposed going into the Medway coal trade, concluded at once that it would be decidedly necessary he should visit that agreeable river. Possibly they were right; but I am sure I was justified in coming to the conclusion that when I purposed writing something about the wireworm (about as definite a phrase as if one were to say, "the caterpillar"), I had better make personal acquaintance with one. True, I had remembrances of interviews with certain "grubs," in years gone back, reputed to be "wireworms," yet I could not have drawn a portrait of one of these from memory either with pencil or pen, nor did any notable fact remain in connection with the same, saving and excepting that one was shown to me by a gardener, whose naturally long visage gained so much extra length from the disgust with which he viewed this special enemy, that had I possessed a portable photographic apparatus I should have entreated him to remain motionless, that I might secure a "phiz" that was remarkable if not admirable. Books are all very well, but they have their errors. What was to be done? The weather precluded country excursions; could a "wireworm" be obtained close at hand? I recollected

that in my suburban garden plot, brick-surrounded and smoky as it is, I had seen during the previous summer indubitable "skip-jack" beetles, of small dimensions, and it followed as a natural inference, that it would be by no means unlikely that larvæ were feeding not very far off from where imagos had been seen. Out with the spade, drive it into the peculiar composition which in town gardens we call mould! Alas! recent frosts have rendered the ground rather unmanageable, and after some efforts I fell back for consolation on the "fox and Grapes" fable—there are no wireworms here, or, if there are, they won't be worth the trouble I am bestowing upon them. Deserting the garden for the library, I see no reason, nevertheless, for dropping my design altogether; something may be said historically upon the wireworm now, as this is the season of the year when in gardening operations it is occasionally unearthed, and as very shortly, with the returning warmth of spring, its ravages will be more considerable. At a future date some additional facts may be appended regarding this rather memorable insect.

The wireworm or wireworms, for they should certainly be spoken of in the plural, though, perhaps, greater enemies to the agriculturist than to the horticulturist, exert very injurious influences in kitchen gardens during some seasons. More particularly are they likely to show themselves in ground which has been recently converted from pasture to garden ground. And it is very necessary to bear in mind that other creatures besides the Elater larvæ have been, and still are, designated by this name. Millipedes and centipedes have been called wireworms, and also the larvæ of some of the Tipulæ. This is coming rather near the mark, but still incorrect. Wireworms are the larvæ of certain beetles belonging to the family Elateridæ, a section of the Coleopterous order, including some remarkable insects. In America there are phosphorescent species, mostly belonging to the genus Pyrophorus. One very common in Mexico and Brazil (P. noctilucus) is called the Cucujò. These are used as adornments for the hair, and shed sufficient light to enable one to read. Like the glow-worms, they can modify the light at will, by interposing a membranous film. This luminosity appears to come from what a writer calls its "phosphorescent bumps," though the abdomen emits a light also. But this circumstance is chiefly interesting when taken in connection with the fact that one of our British Elaters, if not more, has a similar power. Mrs. Cox has referred to this species as the wireworm, and alludes to the injuries it produces in hotbeds and greenhouses, where it does mischief, especially to Melons and Cucumbers. No doubt this is true in a measure, yet an investigation of the works of various authors who have published their observations on the different species of Elater, leaves us in some difficulty as to which should be most deeply stigmatised amongst them as injurious to garden or field produce. Modern entomological science, as we know, tends to the multiplication of genera, and the old genus Elater has been split up considerably. They are, in the perfect state, noticed by even the generally unobservant, and popularly known as "skip-jack," or "click" beetles. Some have received distinctive English names—merely the echoes, though, of their Latin appellations, such as the acuminated click beetle, the long-necked, the tawny-legged, the satin-coated, the marginated, the red-tailed, and so on. This matters not much, however, to the gardener, who heeds not very much minute distinctions; so long as the general habit of the species enumerated be the same, or nearly so, he will be content to say, modifying Byron's quotation, "Arcades ambo"—that is, translating freely, "blackguards are ye all."



Wireworms.

Really destructive as are the wireworms while in that stage, the beetles they produce are highly curious, their saltatorial propensity enabling them to execute manœuvres which are puzzling, yet easily understood when explained. Kirby, commenting on Cuvier, points out that his observation regarding vertical leaps, which he said could only be taken by birds and by man, is incorrect, since the Elaters very frequently (though not always) spring in this manner. Hold one of these fellows tight so that he cannot move, and he still produces his peculiar rap, and you are surprised at the wonderful amount of strength contained in so small an organisation. Were it not for this natural provision, individuals of this tribe when they fell upon their backs would have exceeding difficulty in regaining their legs, and a continuance in such a posture beyond a certain time is death to beetles, as to many other insects. A beak at the extremity of the prosternum is the main agent in the movement. The head and abdominal extremity touch whatever surface the beetle may be resting upon; then, as it unbends, this point strikes into the hollow of the ring next to it, and as the back comes down to the level, the jerk mounts it into the air to a distance of 6 or 8 inches or more.

The larvæ or grubs of the different species under consideration are assuredly wiry enough to merit the common name, or, at least, the first half of it; the second is less appropriate, since they have six very distinct legs. A figure which is given in Figuier's "Insect World," representing one, is probably much too dark, the colour being, I believe, greyish white usually, or a yellowish brown in some instances noticed. The wireworm has been compared to the meal worm, being slender, flat, and shining; the legs are short, adapted to the burrowing life it leads, and at the extremity is a tubercle, which serves as a fulcrum in case of need. Many years ago, Kirby, in his investigations into the economy of predatory insects, ascertained that in Norfolk and Suffolk Elater obscurus (of Marsham) committed extensive ravages. More recent observers in Scotland describe this as being still a very injurious species there. "Indeed," says McIntosh, "the presence of wireworms in soils cropped with autumn-planted Potatoes is more to be dreaded than the frost." The species named by Linnæus E. lineatus has been repeatedly commented upon as one of the farmer's pests, though its ravages have been remarked as extending also to gardens. In addition to the tubers of the Potato, Carrots, Turnips, Cabbages, and Beans, have in turn suffered from the subterranean work of the larvæ of some Elater. That choice and troublesome plant, the Asparagus, has its buds perforated under ground, while the offender not unfrequently escapes scot free, for owing to the mole-like life led by the wireworms, the work of their jaws is ascribed at times to worms, slugs, &c. It has been stated, too, that like the cockchafer, some at least of the species exist for several years in the larval stage, resting, at least partially, during the winter season. Not at all improbable is it, however, that under certain circumstances they feed on through the winter, as is known to be the case with many subterranean larvæ.

Deep digging has been recommended as tending to reduce the numbers of the wireworm, but it is only a very partial remedy, and of limited application. Trap-setting done at the proper season is of much advantage. The best plan seems to be that of placing slices of Potato on the points of sticks, and burying these beneath the ground to the depth of some inches. Every day or two they should be pulled up, and the "catch" disposed of by burning. Traps on the surface of the earth have also been tried with some success—not only pieces of Potato, but also slices of Turnip, and the stalks of Lettuces. A writer on gardening states, that by persevering in these modes he captured many thousands in a fortnight's time in a Carnation border, which was infested. Spirit of tar and the refuse lime of gasworks have been also used as destructive agents where they could be applied. But the oddest remedy, perhaps, is that which checks the ravages of the wireworm by cramming it to death with luxurious food. Rape cake broken into small pieces is drilled into the ground—say a few weeks before Carrots are sown, where that vegetable is in danger. This is most effective, so it is said, in dry seasons, and the larva devours this food until it dies of repletion. Perhaps so, yet I am half inclined to suppose that its death is hardly to be accounted for on the repletion theory, since over-gorging does not appear to prevail in the insect world. It may be that the oily bait is unwholesome to its constitution, though pleasant to its palate.—J. R. S. C.

ENTOMOLOGICAL SOCIETY'S MEETINGS.

The Anniversary Meeting of this Society was held in the rooms of the Linnean Society, at Burlington House, on the 23rd of January, when Mr. A. R. Wallace was re-elected President, and the routine business transacted. A satisfactory report of the Society's accounts was read, and the President delivered an annual address, reviewing the entomological proceedings and publications of the past year, and discussing at great length a paper on the geographical distribution of Coleopterous insects lately published by Mr. A. Murray, in the course of which the President dissented from most of Mr. Murray's views. A vote of thanks to the President for his address was passed, and the address has since been published and distributed among the members.

The February Meeting of the Society took place on the 6th of

that month, Mr. A. R. Wallace in the chair. After the appointment of Vice-Presidents, election of new members, &c., Mr. F. Bond exhibited some rare Moths from Scotland, including Pachnobia alpina, *Westw.*, Gelechia horeella, Larentia cæsiaria, and some very dark specimens of Thera juniperata; also a portion of the web, 2 or 3 yards long, spun by the gregarious larvæ of one of the small Ermine Moths, Hyponomenta Padella, likewise a specimen of Vanessa Atalanta in the winged state, which still retained the head of the caterpillar enclosing the head of the butterfly; also four singular specimens of the common Brimstone Butterfly, Gonepteryx Rhamni, in which the wings exhibited a greater or less mixture of the dark and light colours peculiar to the two sexes, as well as a series of photographs containing highly magnified representations of the eggs of various bird parasites, some closely resembling sea anemones, from slides prepared by Mr. Norman. The Rev. H. S. Gorham exhibited Oxytelus fulvipes, *Erichson*, a Beetle new to Britain, from Staffordshire.

Professor Westwood exhibited specimens of a minute water Bug (Cocixa ovivora, *Westw.*), which is very destructive to the ova of freshwater fishes in India, proving a great enemy to experiments in pisciculture in the east; also drawings of a singular species of Scale Insect (Coccus stellifer, *Westw.*), injurious to the leaves of Cypripedium niveum, from Siam. The male scales are extended into eight radiating plates tipped with white, and with a white rib down the centre of each. The Professor had fortunately extracted a winged male from beneath one of the scales.

Mr. A. Müller exhibited some curious galls on species of Oak from Tangiers, collected by Mr. Blackmore; and Mr. Butler read descriptions of a new genus and seven new exotic species of Butterflies belonging to the Pierides.

DINNER-TABLE DECORATION.—No. 2.

I now come to another feature in dinner-table decoration, and that is the use of materials different from those which the gardener usually employs; one of these is the use of large sheets of mirror glass laid flat on the table, the various kinds of ornament or requirements of the table being placed upon this glass. Here we have sheets about 5 feet long and a little less than 2 feet wide; these we find quite wide enough. There are other sheets which are shorter, in order to fit the length of table wanted, and as many of these as are necessary are laid along the centre of the table upon the naked cloth. I ought, however, to observe that the sheets of glass are fitted to slight frames sufficient to move them with, and rest upon a very thin boarded back perfectly flat, so that no weight likely to be put upon them will break the glass. The frame is about an inch thick at the edges, and not more than half that in width. On the side next the glass this edging in our case is simply painted green, as we invariably surround it with a bordering either of Lycopod or some made-up wreath of flowers or evergreens, generally, however, with the trough; and it has been thought good taste to stick in sprigs of a graceful small-leaved plant, say Panicum javanicum variegatum, sprays of Pampas Grass, or something of the kind, but nothing higher than 4 or 5 inches. These being reflected by the mirrors look well. At Christmas a wreath of Holly all round has also a good effect. The stands of flowers, the candlesticks, and other things proper for the centre of the table may all be placed in their usual position; but care should be taken to hide the joints of the frames where the portions of glass meet; a stand or something similar will help to do this. No further bordering on the table is needed; the frame, either of evergreens or flowers, to the looking-glass is generally quite sufficient. Besides the stands in their usual places, some small baskets of flowers of a neat and effective kind, that will be mentioned hereafter, may also have a place if there be room. It is, however, not advisable to crowd the looking-glass, but to leave plenty of space for the flowers to be reflected from; a little experience will teach when enough has been placed on the glass. It ought not to be so thickly studded with objects as the cloth might be, otherwise the purpose for which it is used—namely, to reflect the objects upon it, is to a great extent defeated. When many superficial feet of mirror are used in this way, the number or efficiency of the lights ought to be increased, for, to borrow a humble phrase, it is astonishing how the glass seems to swallow up the light, certainly more so than a green cloth or a mass of foliage.

The seeming necessity for using flower-stands alternately with the candlesticks having been frequently alluded to by me in previous articles, I may add that the kinds we have here are partly of the March design and another of about equal height. These we dress in the usual way, filling the bottom dish mostly with short-stemmed flowers fully expanded, while those for the top are of a more feathery description, and some pendent ones hang over the edges of the top dish, for which purpose nothing exceeds Fuchsias or the berries of Rivina humilis. The most effective flower for the bottom is the beautiful star-shaped Eucharis amazonica. I am not sure if this does not exceed Water Lilies; certainly it does so in one very important feature, for the flower does not shut up at night when its beauties are most wanted. It can be had in midwinter, and when cut keeps longer, I believe, than any other flower I know. The Eucharis has been with us the most valuable plant grown for the purpose, and a few blooms will go a long way, as it is not advisable to crowd them. Of course a certain amount of green in some form is necessary, including the invaluable Maidenhair Fern, which ought to be kept in reserve till the last, as it withers so soon. Covering the edges of the stand is best accomplished by foliage that will hang over in a natural manner. Well-selected leaves of Tricolor Geraniums do very well, while for a change we have sometimes the Palm-looking leaves of Helleborus fœtidus, and sometimes the much larger yet equally elegant foliage of the common Berberis Aquifolium, especially when a sufficient number of rich crimson ones can be procured. In hue these leaves far exceed those of any Dracæna I am acquainted with, and being bright and glossy they look well at night. In summer an abundance of materials can be had, but often in winter everything that can be turned to account is brought into requisition, and a very common plant will in many cases look as well as the occupants of exotic houses. We have for several winters used along with other things the berries of some large plants of Cotoneaster Simmondsii, which are growing against the walls of houses facing the north. These bright shining berries, of a clear orange colour, look well when numbers of them are clustered on the spurs of the tree, as they are when it is grown against a wall and properly pruned, but they are of little use when it is grown as an open bush, and the birds do not seem to attack them so readily as the fruit of the Pyracantha and other Cratæguses. A set of troughs dressed with the short trusses of Laurustinus blooms and a few of these tufts of berries put in amongst them, look very showy, the edges of the troughs being hidden by overhanging Ivy leaves. Holly berries are more difficult to manage, but they, too, are used, and on one particular evening Mistletoe may be worked in; still I am no advocate for indiscriminate mixtures, nor, in fact, for mixtures at all, except it be of only two kinds. Perhaps in the tops of the flower-stands this rule may be disregarded, but employing too many different materials there is also objectionable.

Little things often materially augment the general effect, and we have frequently thrown in some green when none was near, by putting a star or other device underneath the candlesticks, generally using selected Portugal Laurel leaves that are flat. A portion of their base being cut off, they are sewn upon a piece of white paper or card with their points outwards, care being taken to keep the whole as flat as possible. These stars are useful in many ways. Sometimes when plants are substituted for the flower-stands, and the pots either covered with ornamental paper or placed in silver vessels, the stars are placed beneath these.

Apart from the ordinary upright flower-stands which have been described, we have a number of small glass baskets, each about the size of a tea-saucer but deeper, and having a twisted handle. The bowl of the basket rests on globular knobs, and beneath it is placed a prepared circular mirror-stand 16 or 17 inches in diameter, separate from the basket, and having a bordering of crimson chenille. These little baskets when filled, not crowded, with flowers, can be placed anywhere, and in my opinion look better than the taller ones, and are as useful for the drawing-room table as for the dinner-table. On the latter they can be introduced to fill up any spare place that may be desirable. They are made of ordinary white glass, all plain excepting the handle, and its presence amongst the flowers, &c., is pleasing.—J. Robson.

VERBENA CUTTINGS FAILING.

For two years my Verbenas have been suffering from the same cause as "R. F." mentions, and particularly Purple King. The cuttings when inserted in the autumn were not quite so good as I should have liked, still they struck readily enough, but after the first pinching that I gave them they began to look worse, and gradually died down from the point to the root, till I am now almost out of stock to propagate from. Last year it was Géant des Batailles that suffered most.

On seeing Verbena cuttings were gradually going off I have often thought over the subject, and I have come to the conclusion that the chief cause is that the stock is worn out. The

place where I am is far from any other garden, and I have to depend altogether on my own stock. I believe the stock of Purple King has not been changed for many years, and the same remark applies to Géant des Batailles. Last year I begged a few cuttings of the latter, and the plants from these grew much better all summer than any of the others, furnishing good cuttings in the autumn, and not one of them has gone off throughout the winter, all being treated alike. The other kinds which I grow have all been from fresh stock procured within a few years, and I cannot complain much of them, but even with them I find those which have been here the longest are the most difficult to obtain good cuttings from, and to keep all winter. I intend to obtain a few fresh plants of Purple King and watch them, and, if you think proper, I will report the result next year.

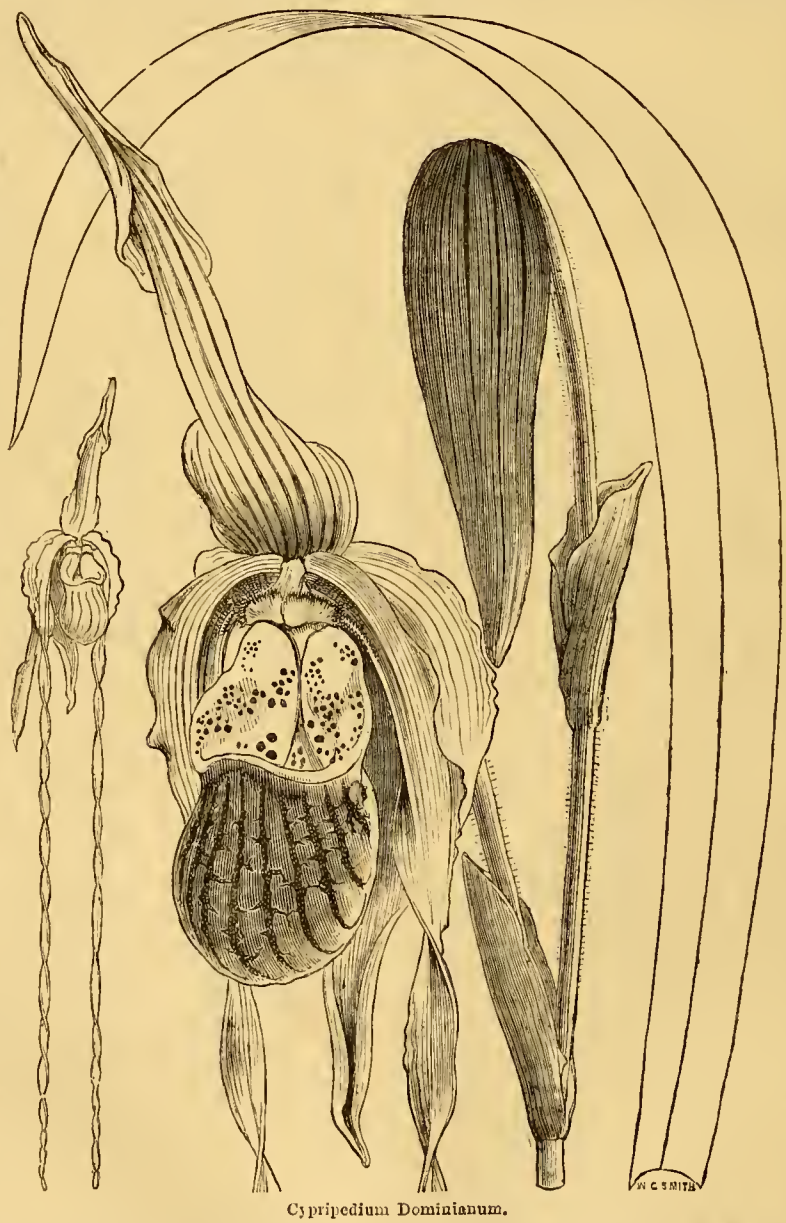
I think that it is desirable to change the stock sometimes, particularly when the same few beds have to be planted year after year, with just the addition of a little light manure perhaps. I hope some of your readers will observe the results of changing their stock, and report their experience.—S. N.

[We advised a change of cuttings years ago, and it would be more practised if gardeners could do so without endless explanations to employers.—Eds.]

CYPRIPEDIUM DOMINIANUM.

This beautiful variety is deservedly named after Mr. Dominy, so well known as the successful cross-breeder of Orchids at Messrs. Veitch's. Mr. Dominy obtained it by crossing C. Pearcei and C. caudatum.

The chief points in his own description of this offspring are as follows:—Peduncle many-flowered; spathe-like bracts half the length of the ovary; ovary rather pilose; sepals oblong triangular; petals caudate, ciliated; lip saccate, near the mouth retuse. It is remarkable that it is in almost every feature an intermediate of its two parents. Its flowers have the yellowish-green tint and purple veins and blotches of caudatum, and like them open all together. Messrs. Veitch find that it is a very free-growing variety.



Cypripedium Dominianum.

High March Temperatures.—So early in March the following high temperatures registered here may prove of interest. The thermometers have been verified at the Greenwich Observatory.

Day. March.	Max. in shade at 4 feet.	Max. in sun at 4 feet.†
2nd	58.4°	106.8°
3rd	65.4°	112.0°
4th	65.0°	112.3°
5th	57.2°	113.5°

—Francis Nunes, *Chislehurst, Kent.*

WATER SUPPLY.

I find that we have not here done half enough to insure the requisite supply of moisture in summer. There have been many showers, and many drizzling days, but here (near Luton) we have not had enough of moisture to penetrate far into the subsoil. Without a much greater rainfall I fear that next summer we must not depend on the moisture beneath. There are few places where thousands of gallons of water have not run to waste. With a continuance of such summers as we have lately experienced, a large reservoir of water will be indispensable both for the farm and garden, and the first expense of forming one will be true economy in the end. From a single broad piece of gravel I found that the water ran off it into a drain during a heavy rain at the rate of a gallon per minute. How valuable that water would have been in July! From all I can learn, the water in deep wells is getting very low, and is likely to be lower still.

Those who have a water supply at command know nothing of the ceaseless anxiety many of us endured last summer, when the great consideration was with how little water we could manage to keep plants alive. Even for damping paths, &c., in houses I was glad to use dirty water, knowing that there would be no sediment in the vapour given off. Contrast such a state of affairs with that of the gardener who, by turning a tap and hose, can water any part of his ground. No doubt there has been much injudicious and over-watering, but that is a very different affair from not being able to water at all. Without mulching and shading last summer many gardeners would have been quite unable to furnish a regular kitchen supply, and I only hope that in the ensuing season we shall have more moisture in the ground to fall back upon, if not larger reservoirs.

If I were entering on a large fresh place, where many pot plants, &c., were expected to be grown, I would, as a matter of first importance, make careful inquiries as to the water supply, and this is of still greater interest to a young gardener entering on his first place. I fear that it is something incidental to humanity to make some allow-

† Black bulb vacuum thermometer.

ance for shortcomings when there is a seen cause of failure, but to forget all about the consequences when these causes cease to be so conspicuously perceptible. I know that in many cases when the refreshing showers of last autumn came it was expected that the usual results in autumn produce would be forthcoming, altogether ignoring the dryness and the want of water power in summer. There are plenty of employers who will sympathise with the gardener in the loss of Cabbages and Broccoli from frost, but they will be apt to forget the frost in the fine sunny days of April and May, and perhaps grumble over the want of the accustomed supply. No gardener can at once make up the deficiency, but if wise he will try every means to let it be felt as little as possible. Of one thing he may rest assured, that when fine weather comes the effects of the frost will be little considered. The fine-weather produce will be eagerly looked for, and he must try by every means not to allow wants to be felt.—R. F.

NOTES AND GLEANINGS.

The public will hail with satisfaction the appointment of Mr. Gibson as the Superintendent of Hyde Park and Kensington Gardens, in both of which, and especially the latter, there is much room for the exercise of Mr. Gibson's well-known taste in garden design and his skill as a cultivator. His new position will afford a fresh field and a greater scope than Battersea Park, which has rendered his name world-famous. The superintendence of Battersea Park, we understand, falls to Mr. Roger, late of Berry Hill, Maidenhead, and that of Victoria Park to Mr. Macintyre, formerly of Kew.

WORK FOR THE WEEK.

KITCHEN GARDEN.

As the land becomes dry turn back with the fork the plot intended for *Carrots*, that it may become pulverised and open before sowing. The most profitable Carrots for small families are the Scarlet Short Horn and the Short Orange; a few of the Long Red may be added, as they keep somewhat better. Prepare a sheltered border for sowing a small crop of *Cauliflowers*, *Cabbages*, *Brussels Sprouts*, *Savoys*, and *Leeks*. To have the Leeks fine, sow under glass in a little heat, and afterwards prick out. Also, as the ground becomes dry, turn back with a fork the plot intended for *Onions*, preparatory to sowing as previously advised. The most useful kinds of Onions for general purposes are the White Spanish or Portugal, Strasburg, or White Globe, with a few of James's Keeping for late use. Underground Onions are useful for affording bulbs till the general crop is ready, and the true Silverskin for pickling. The autumn-sown plants should now be transferred to a warm rich border to furnish an early supply, likewise a few of the smallest bulbs of last year for the same purpose. *Parsley* and *Winter Spinach* will be much improved by a dressing of soot on the first wet day. Protect the crowns of *Rhubarb*, particularly the early kinds, by straw placed over them. *Sea-kale* in the open ground should be earthed-up to blanch. When the soil is sandy and light it may serve, but should be broken down fine before placing it over the crowns, that the heads may not grow crooked. On heavy soils old tan, decayed leaves, or coal ashes are useful substitutes for blanching.

FRUIT GARDEN.

Presuming that the pruning, training, &c., of trees and fruit bushes is now complete and the ground properly forked over between them, attention should be directed to the Strawberry plantations, which generally appear to have suffered severely. The beds should be cleared of weeds, and a dressing of rotten manure spread between the rows; it may afterwards be forked in very lightly, so as not to injure the roots. In doing this spread a little soil up to the crowns of the plants; doing so will assist the growth of new surface roots. Last season's runners should be gone over, and those which have been thrown out by the action of the frost should be made firm in the soil. Afterwards mulch the surface. Last season's leaves, although turned brown, should remain on the old plants for some time, in order to protect the new growth from cutting winds and frost. Apricots, Peaches, &c., if not previously covered, should have the protecting material put on, quite as much for the present to retard the opening of the flowers as afterwards to protect them from frost. The longer the opening of the flowers can be kept back the greater the chance of a crop.

FLOWER GARDEN.

The mixed or picturesque styles of gardening being those most generally adopted in places of moderate extent and for situations where a more formal style would not harmonise with other objects, herbaceous plants should always form a principal feature in gardens of the above description, and especially where the proprietor is resident the greater part of the year. To those who have hitherto grown only the usual bedding-out plants and annuals, and who have to wait till midsummer for a display of flowers, it is recommended that they procure a selection of the more showy Delphiniums, Campanulas, Phloxes, Dianthuses, and other ornamental herbaceous plants, Liliums, &c.; for planting among shrubs in borders, and for mixed beds, they are invaluable, while the fact of their affording a succession of bloom from early spring almost to Christmas ought to obtain for them a more general introduction, particularly where cut flowers and a continuous show of blossom are essential. The improvement in habit and colour which is annually taking place in the above and other genera of herbaceous plants is an additional inducement for growing them. A few annuals, including German Ten-week Stocks, may be sown in pots thinly for transplanting in the open borders in April for an early bloom, more especially as many autumn-sown annuals will have perished. Any Anemones yet remaining out of the ground should be planted, and the same direction will serve for any other bulbs yet unplanted.

GREENHOUSE AND CONSERVATORY.

The earliest started hybrid Rhododendrons and Azaleas, if now opening their flowers, should be placed in the conservatory, where they will add much towards making the house more than usually gay by the large masses of colour which good specimens of these showy plants present. During the period of blossom they must not be allowed to suffer from want of water, as the flowers always droop when such is the case. To make room for the above and other forced plants, any Camellias in pots which are going out of bloom may be removed to a cool house to rest. Keep up a supply of the various kinds of Roses, Lilacs, Weigelas, and the general stock of forced shrubs and bulbous plants. Those useful spring-flowering plants are equally valuable for cut flowers as for show. In addition, do not forget to have a large share of scented plants, as forced Sweet Briar, Aloysia citriodora, Oranges, Daphnes, Mignonette, and Violets, plants which are always in request. The weather having become milder, fire heat may be dispensed with for hardwooded greenhouse plants, unless the night temperature falls below 35°. At this time, however, and for a few weeks, let the necessary waterings and cleaning be done sufficiently early in the day for the air of the house to become dry before evening, when less danger will arise to the plants by a low night temperature than when they are exposed to it surrounded by a damp atmosphere. Pelargoniums, Calceolarias, and similar plants of soft growth should be kept in a night temperature of 45°, which may be increased a few degrees if the plants are wanted to bloom early. Keep them near the glass, and at a sufficient distance apart to admit the light freely to their lower leaves, which otherwise will turn sickly and fall off.

STOVE.

Stove plants which have been pruned-in and have made a few inches of new wood should be potted. Large specimens of Clerodendrons, Allamandas, Vincas, &c., should be partly shaken out and moderately disrooted. After potting plunge in a mild bottom heat, and syringe frequently to promote a healthy growth. Water must only be moderately supplied to recently potted plants until they become established. Let the night temperature be 65°, with an increase of from 10° to 15° on bright days. Although the shifting and fresh dressing of the general stock of Orchids will in most cases be completed, yet when the stock is extensive and contains a number of duplicates they should not all be started at the same time, as it is more desirable to have a succession of plants for blooming than a glut at one season, unless special reasons sanction a contrary practice. As this tribe is now mostly commencing growth, a gradual increase of temperature, accompanied with atmospheric moisture, should take place to encourage the utmost development of the present season's growth. Care must be taken that at this critical period of their growth the young shoots are neither rotted off by water being allowed to lodge round them, nor destroyed by slugs or insects. The latter should be trapped, and a nightly examination be made by candlelight for the former till a riddance be effected.—W. Keane.

DOINGS OF THE LAST WEEK.

Another glorious week—enough to make the heart of the seed-sower rejoice, for never did we see ground in better condition for sowing. We had the March dust even before March

came, let us hope we shall see something of April showers, for in this district water is anything but abundant, and thoughtful people are beginning in earnest to see the importance of not allowing the rains that fall on buildings to run to waste as formerly.

Such a season as this presents us with a vivid contrast as to the labours and cares of the farmer and the gardener. The farmer, when he has all his main seed crops transferred to the soil, can take a little repose; but, even in such fine weather as this, the gardener can sow only a small part of what he must have as produce during the season. With him, except as regards root crops, the question is less how to bring a number of crops to maturity than to have a number of succession crops, fit to be consumed in a juicy, succulent state, and therefore, however anxious, he can take but comparatively little advantage of the fine weather, so far as sowing is concerned.

KITCHEN GARDEN.

We have sown Parsnips, and a portion of Onions and Carrots, and will sow more Onions in the course of a week, as well as more Carrots at intervals of several weeks. For giving satisfaction with rich crisp Carrots, it is advisable to sow frequently until the middle and end of May, and even later. The worm seldom attacks Carrots whilst they are young, and even if they are not so large, they are very sweet and nice from late sowings, and suit admirably for being cooked whole. Parsnip being a very hardy seed can scarcely be sown too soon, if the ground is mellow, dry, and nicely pulverised. Beetroot, Salsafy, and Scorzonera we defer sowing for a few weeks longer, as there is a risk of their showing a seed stem when sown early. For all these root crops the ground should be well moved by trenching, ridging, and re-ridging if it is stiff; and to obtain fine, straight, clean roots, the manure given to such ground should be placed at the bottom of the trench to entice the roots downwards, and hence the surface soil should be poor rather than rich. With such care, even in old rich kitchen gardens, fine roots can be obtained by having these crops following a rather exhausting crop of the Cabbage tribe or Peas. We have sometimes had such roots after Celery, but whether the Celery was in rows or beds, the dung of the trenches, however equally distributed, was apt, from getting mingled with the surface staple, to encourage surface-rooting too much, and hence we are liable to have forked, branched, and crooked roots instead of clear, handsome, straight ones.

In all old gardens, with a superabundance of organic matter in the shape of manure, and which is apt to become sour and inert, nothing will be of such service as a dressing of quicklime incorporated with the soil. Even chalk in stiff soils will often be of great service as a lightener and regulator of moisture, but it will not act as a solvent like quicklime. In some cases it is quite surprising how a coating of an inch of lime will render a stiff soil porous and easily pulverised. It adds little or nothing, however, in the way of fertility to poor hungry soils, but even in them it acts beneficially by making them more retentive of moisture, whilst in stiff heavy ground the extra moisture, through its influence, passes off more freely. The most striking effect of a lime dressing is to be found on soil that may be said, from frequent cropping and manuring, to have become dung-sick; on such ground the effect is often very striking. With such a dressing the crops of Potatoes obtained in old kitchen gardens are often wonderful: hence lime acts most effectively on peat-mossy land, rendering the inert astringent vegetable matter soluble. On such ground we have seen extraordinary crops of Carrots.

We planted a good breadth of early Potatoes, placing them about 6 inches deep, as then, in common seasons, it is a matter of little importance whether they are earthed up or not. Last summer we wished we had earthed all ours up, as those earthed-up felt the effects of the dryness least, and ripened a heavy crop of fine tubers early. Those not earthed did not yield such fine tubers, the drought sooner reached the roots. In an ordinary favourable season we have found that Potatoes planted from 6 to more inches in depth yielded quite as good, and in some cases heavier crops than those that were earthed-up. Last season was so exceptional in its dryness that it is hardly appropriate to draw conclusions from it, except in the way of warning.

Plenty of air was given in the fine days to Potatoes, Radishes, Carrots, Lettuces, &c., in frames. Planted out a piece of early Potatoes in an earth pit, with hot leaves and manure beneath them, and some old sashes and other protection over them. Sowed Radishes between, as they will be ready to be off before the Potatoes shoot many inches. Our most forward Potatoes were planted in 9-inch pots, and placed in front of the Peach house until they were rather in the way and began to give signs of drawing a little, when they were removed to an earth pit, the pots being plunged an inch or two over the rims in a bed of old and new leaves that just yielded a mild heat, whilst the tops were protected with old sashes. These are tubering very nicely, and, as a general rule, early gatherings may be obtained more easily from pots than from Potatoes planted out in frames and pits.

We have a strong regard for *box frames* covered with sashes; they can be so easily moved, and turned to so many purposes, and when used for early Radishes, Carrots, and even Potatoes, they can be moved off as the spring advances, a more modest protection given, and the frames and glass used for other crops needing more heat. The brick pit cannot be moved. You may, in the same way as just stated, use the glass lights, but nothing more. Whilst loving the old frames in which even from early Cucumbers and Melons we have seen almost as great results obtained as by the best mode of heating by hot water—upon the whole, wherever there is game encouraged near the garden, and that game is fed when necessary, we should like entirely to substitute pits for frames, as mice and rats cannot so easily enter by the brick, and, if the wall-plates are sound, can hardly enter at all, except when the sashes are open. At one time when the wall-plates of even pits were worn out, it was not uncommon to find in the morning two or three runs made through the plate, and much mischief done by cutting things down in mere wantonness. When pits are resolved upon, it will be a great advantage to have them together, and in all cases where fuel is easily obtained, to furnish them with piping sufficient to keep out frost, as the fuel will rarely cost so much as covering, labour, and the breakage likely to be incurred. One evil, however, is very likely to ensue, and that is, if there is no hotbed of dung formed, the gardener may wish and wish over and over again for manure when he really wants it.

The Effects of the Winter.—We had a slight tour on business the other day, and where all vegetables as a rule were a week or ten days earlier than here, and, if such a thing could be possible, the wreck was more general; but in a few cottage gardens we found the Cabbages have stood, and in each case the plants were smaller and younger than ours. As already stated, our crops withstood the severest frost uninjured, but the damp, and fog, and comparative warmth between the two frosts did the injury. We were not aware that the temperature had been so low in this neighbourhood. Mr. John Fells, of Hitchen, told us that on one night with him the thermometer fell below zero of Fahrenheit for a couple of hours or so, and then it rose, and to that low temperature he traced the destruction among some of his finest shrubs. We forget now the hours of the night in which it was coldest with him, but we did not notice it so cold here at any time, and part of the mystery may have been that we did not notice the thermometer during these hours. We think, however, from all we have heard that the temperature varied much in different districts, and that in some cases it was the coldest in dry light soils, where we should have supposed it to be the warmest. On such light lands Laurustinus, Cupressus Lambertiana, &c., have been killed to the ground, whilst here they exhibit no trace of injury. In one place we saw the common Laurel as if the shoots had been exposed to a blast from a furnace, whilst here they are as green as if no frost had touched them. Singularly enough, in some places where shrubs have thus suffered the Cabbages have suffered far less than ours. Our expectations are so far realised, that in the light-land market gardens about Sandy and Biggleswade the young Cabbage plants have stood comparatively uninjured, and all the better the smaller the plants were. As remarked some time ago, the thoughtful gardener must use every means to bring up his leeway, as when the fine weather in May comes on the frost and its disasters will be apt to be forgotten.

FRUIT GARDEN.

We have not yet limewashed any of our dwarf fruit trees, but we fear we shall have to do so, as though the short hard-billed birds are less numerous than last year, they have made their mark on some of the most forward buds. Potted off Melon and Cucumber plants a second time, as we have no place ready for them as yet, and little is lost by having strong plants when turned out. A few Cucumbers are still to be had from some old plants in a small pit, and the young plants in large pots will soon take their place. No weather could be more favourable to them after the dull weeks and months. In all

such sudden changes from dulness to brightness, a little shading for an hour or two is often more beneficial than watering when the roots are moist enough. The plants should never flag, but in such sudden extremes from cloud to bright sunshine the leaves cannot at once, though there may be moisture enough at the roots, get the requisite amount of liquid to meet the greatly increased evaporation. A slight syringing to arrest evaporation will often be better than shading. We have even sprinkled the outside of the sashes with clean water, as before that was evaporated the rays of the sun did not pass freely. It is always advisable never to allow a leaf to flag, whatever mode be used to prevent it. The great evil of shading is not so much shading when necessary by any simple mode, as that the putter-on is apt to allow the shading to remain too long. Every minute it remains on when not wanted tends to make a plant weak, and to rob it of its natural robustness. Except for plants that naturally delight in the shade, the less shade they have, save in sudden extremes of dulness and brightness under glass, the better it will be for them.

Manure watering to everything in pots should also be given with discretion; it is seldom advisable to give it to flowering plants before the flower buds appear and the pots are well filled with roots; for such things as Strawberries in pots the flower trusa should show boldly. For Melons it is best to have the fruit set and swelling before manure water is given. There would be fewer errors on this subject if we could always recollect that brandy and fine old port are different things from small beer, however refreshing the latter may be. We once knew of some young Vines with roots near the surface of the border, and they never recovered after a copious watering taken from the cesspool of a large stable, and applied just as it came. The liquid was so strong that it would have stood well five or six times its bulk of common water, and then been strong enough for anything.

ORNAMENTAL DEPARTMENT.

There is still much planting, turfing, and alteration to perform in the pleasure ground, and for levelling and turf-laying no weather could be finer. If we should have a good rain in a short time all will be well, and the fresh turfing will never be distinguishable in summer. Where experienced layers of turf cannot be found much may be done by levelling well, and having the turf cut of uniform width and thickness. Many old lawns become uneven in the course of years, and taking them up, fresh levelling, and relaying, besides other advantages, are next to a death blow to the most staring broad-leaved weeds.

A short time ago we noticed an inquiry as to the merits of a chemically prepared sand for eradicating all such broad-leaved *weeds on lawns*, as Daisies, Plantains, &c. We have forgotten for the present the maker's name. The great objection to the free use of the material was its price, except for a lawn of the smallest dimensions. We tried a little barrel of it, and found that when freely applied all such leaves first became black, then shrivelled up and disappeared, and the roots of Plantains were killed to their extremities. Smaller doses killed the leaves and part of the root-stems, but in a month or two small stems came again from the bottom of the root. What seemed to us, however, the most incredible part of the statement of the maker and vendor was, that this sand powder would do no injury to, but rather improve, the common grasses of our lawns; but we found this statement perfectly correct, inasmuch as whilst it blackened and shrivelled up Plantains, &c., it did no injury to the common grasses. On the whole, on the score of economy, we satisfied ourselves that it would be cheaper to grub up Plantains, &c., to the extremities of the roots than to use the prepared sand. But there are many who would like to get rid of the weeds without disturbing their lawns, and if any of our readers have tried the remedy we should be glad to hear the results. We regret forgetting the maker's name, but we have no doubt he has discovered the means of at least temporarily putting Plantains and other large-leaved plants on a lawn out of sight without injuring the grass of the lawn. More decided effectiveness may yet be combined with more economy.

Forward bulbs out of doors will require a little protection from frost and heavy rains if these come. We find great difficulty in keeping such bulbs as Crocuses without being well protected. We have even had the shoots cut over after showing flower. We are almost inclined to give way to envy when we see lines and combinations of Crocuses without a seeming break in the whole, as if the mice disdained to touch them. We may trap by scores, but still the corms of the Crocuses are eaten up. We have thought of several modes of doctoring the corms; but then that would be of no avail as a preventive against having the shoots cut over and mangled when above ground and showing bloom.

We took the opportunity of turning up empty flower beds and leaving them rough, as we prefer what manure we give to be chiefly confined near the surface, to encourage early rooting after planting.

Violets are now coming plentifully in the open air. Our Czar protected with glass has been very fine. Our Neapolitans this year have not been up to the mark during the winter, though showing well now. The reason is, that owing to the dryness of the summer, and our inability to water them, the plants suffered much from red spider. We kept them alive by shading them with evergreen boughs, but the shading helped to weaken them. We trust that they will all be secure next season, as though we may be prejudiced, we still think a fine, large, Neapolitan Violet the king of Violets. For making-up, nothing equals the Czar, owing to the long footstalks or flower stems, as well as the size of the flowers. We have not had an opportunity of seeing some new and different-coloured Violets, single and double, and inquiries have been made about them which we could not answer. We should be glad if correspondents would state the results of their experience, and more especially if there is any white, pink, or reddish variety, either single or double, that for general utility will equal the Czar. We have had some good gatherings of this kind from our open border towards the end of February, and now it is beginning to show from a row at the base of the north side of a wall. We put it there hoping to have it later than in the open ground, and we shall continue this practice. No plant is more easily multiplied, for, not to speak of runners, a small plant of last May may be divided into a good number as soon as it has done blooming. Like other Violets, it is improved by dividing and moving. It should not bloom more than two seasons in one place. We rather think it does best when planted every year, as a small plant in April or May becomes a strong plant before the autumn, if there are showers in the summer.

Much work has been done in potting, cutting-striking, &c., and the great object now is to find room and conveniences for the plants required, without injuring general crops. Many of us must put every house to a number of purposes. Potted-off a good batch of the brown and other Coleuses, Iresines, &c., but must top them several times to obtain the number required. With a little bottom heat, however, such plants strike and grow very fast. Speed will also be obtained by potting all such tender plants in a warm place, using warmed water, and well-aired warm soil. The less check a plant or a cutting has the better, and the more likely will a healthy growth and freedom from insects be secured. The great secret of striking cuttings is to secure the cutting feeling as little as possible its severance from the parent plant. When we see cuttings from a warm place lying wilted and flagging in a shed, or left in a cold place after being inserted, we often wish that the cuttings had a voice, and used it in remonstrance.—R. F.

TRADE CATALOGUE RECEIVED.

F. & A. Dickson & Sons, 106, Eastgate Street, and Upton Nurseries, Chester.—*Catalogue of Farm Seeds.*

TO CORRESPONDENTS.

*** We request that no one will write privately to any of the correspondents of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By doing so they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely to The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

ROYAL HORTICULTURAL SOCIETY'S EXHIBITIONS (*Pomona*).—If you write to J. Richards, Esq., Assistant Secretary, Royal Horticultural Society, South Kensington, he will send you full printed particulars.

VINE MANUAL (*R. Whitaker*).—No new edition is about to be issued, as such is not required. It is the "Fruit Manual" which is in preparation.

DINNER-TABLE DECORATION (*H. C.*).—We shall readily receive your notes.

Most Productive Fruit Trees (*J. C.*).—How could any opinion be given without the slightest information as to soil, elevation, locality, whether for kitchen or dessert, and whether early or late varieties are needed?

Grass Seeds Sowing (*W. B. B.*).—The beginning of April is the most suitable time to sow Grass seeds, taking advantage of weather in which there is an early prospect of rain.

Seeds (*A. B. C.*).—Messrs. Wrench & Son, Seedsmen, King William Street, London, E.C., can inform you.

Planting Pear Trees (*A Subscriber*).—We can hardly give an opinion as to your probable ultimate success. The precautions you have taken for preventing the roots getting into the subsoil are so far good, if sufficient. They may induce the roots to spread nearer the surface, although they may not absolutely prevent their descending. We recommend you to examine the roots frequently and arrest any that may have a downward tendency.

Hyacinths for the 12th February (*Jacob*).—For flowering by the time you name the bulbs should be potted at the end of September or early in October, and should be kept plunged in coal ashes in a cold frame. At the close of November they should be placed in a house with a temperature of from 40° to 45°, and be continued there until the end of December, when they should be placed in a light airy position in a house with a temperature of from 45° to 50°, and in a fortnight they should have a temperature of 50° to 55°. When in flower they should be moved to a cooler house. They will flower finely at the time you require. You will find the properties of the Hyacinth fully given in "Florists' Flowers for the Many." It may be had post free from our office if you enclose five postage stamps with your address.

Begonia Plants Going off (*A Young Gardener*).—The cause of the plants going off, we should say, is the late sowing of the seed, and consequent small growth made before winter, and the "plenty of water" would only assist their going off. Lessen the supply of water, not giving any until the soil becomes dry, and then enough to show itself at the drainage. This is a good time to sow the seed, but we should not hesitate to sow all but the herbaceous kinds when ripe. The latter are best sown in spring.

Cucumber and Melon Pits (*Yeoman*).—Where there is no fear of water, or a drain can be laid to carry off any water that may run towards the pit, the excavation may be 2 feet 6 inches deep, and along the back and front you will require a space of 2 feet for linings of hot dung—that is, if you contemplate forcing early, but if you intend to use it only in summer, then the linings may be dispensed with. The walls of the pit should be pigeon-holed up to the ground level, or 2 feet 6 inches high in front, and 3 feet 6 inches at back. The inner walls, or those of the pit, need not be more than half a brick (4½ inches) thick, and above the pigeon-holes they should be built solid. The sides of the excavation will need brickwork a brick thick to keep up the soil, and should be carried-up level with the ground, and then have a course of well-burnt bricks set on edge. The height of the front wall should be 4 feet, and of the back 6 feet. You will need a partition to divide the part intended for Cucumbers from that proposed for Melons. A 4½-inch wall answers very well. Cox's Volunteer is a good Cucumber of easy culture, Telegraph is also excellent, and so is Masters's Prolific, a not-large but very free-bearing sort. Of Melons, Heckfield Hybrid and Beechwood are good green-fleshed sorts, and Malvern Hall and Pine Apple (Wills), are fine, free-setting, scarlet-fleshed kinds.

Fruit Trees Newly Planted (*Q. Q.*).—No practice is so bad as cutting newly-planted fruit trees to skeletons. Do not shorten any of the shoots of the wall trees except the central shoots, which should be pruned-in to 12 or 13 inches. The short stubby shoots leave entire, if not of greater length than a few inches, and all the terminal shoots train-in at full length. Of course, you will need to cut back all side shoots not intended to form principal branches to within half or three-quarters of an inch of their base, but leaving the spurs entire. It will hardly be necessary to water this month, but if the weather be very dry water may be given, though we have not found it necessary in a quarter of a century's practice. If the soil be moist it is all they require. The Vines planted in hampers and placed in a friend's greenhouse, with canes 6 feet long, will need to be pruned to the length required to reach from the ground to the wires of the proposed vinery; but as the time is gone by for pruning, we would as they swell rub off the eyes to the height you require, and when there are leaves you can cut away the disbudded part. In planting remove the woodwork of the hampers, for if buried we are not certain that it would not breed fungus injurious to the Vines.

Fruit-room Construction (*A. M.*).—The site of a fruit-room should be low rather than elevated, as when it is somewhat below the ground level there will be less fluctuation of temperature. It is necessary, however, that the site should be dry, and if not it must be elevated so as to guard against damp; the floor should be concreted, and the foundations of the walls ought to be asphalted, so as to prevent damp from rising. It is well to plaster the walls with cement. A north aspect is most suitable, and next to that east; a south or south-west aspect is the worst of all. It is very important to maintain an equable temperature, and the best means of securing it is double walls having a cavity of about 3 inches. Confined air is the best non-conductor of heat, and applies equally to cold and damp. The roof should be double-ceiled, with a cavity between. The most suitable temperature is 40°, and not exceeding 50°. Provision should be made for ventilation to dry-up any superfluous moisture, and especially in autumn, when the fruit is housed in quantity; therefore, means of giving thorough ventilation should be provided for, and the power to close should be equally effective. The ventilation should be provided in the highest part of the room, as it then admits of a freer circulation of air. Light will be necessary for operations in connection with the fruit, but at all other times the room must be quite dark. The windows must have close-fitting shutters, and, like the walls, should be double; in severe weather they should be covered with mats, and if they enclose hay and are placed on the outside they will better exclude cold. The atmosphere must not be dried by fire heat, and so long as the fruit is dry the room is not too damp. The means of affording artificial heat should be as far distant from the fruit as possible, and in no case beneath it. These are the main essentials of a fruit-room.

Fruit and Plant Houses Combined (*J. N.*).—In building such houses it is advisable to have them in two or three divisions, as thus you can have a succession of fruit and flowers. For early Grapes we prefer a lean-to house with a wall on the north side, sloping glass to face the south, and the slope not less steep than an angle of 45°. For general crop, and to contain plants for flowering and bedding, we would avoid the building of a high wall, and have a house from 16 to 24 feet in width, with a pathway down the centre, and a stage or platform at each side. Glass will be found cheaper than brick, but for early work more heating will be required for a span than for a lean-to roof, the wall at back acting both as a protection and a reservoir of warmth. Such a house could have its ends due north and south, the north end of brick, the south end of glass. This would answer very well, but instead of due north and south we would prefer the ends to be a little north-east and south-west. We should thus obtain the greatest possible amount of sun. There is a great advantage in such span roofed houses thus placed—that the midday sun strikes the roof obliquely, and the greatest heat will be obtained respectively on the east and west slopes. According to circumstances the decision must be made. A low wall on each side would do for a steep span roof, and the bottom ventilation could be given in the wall, and the top by double-ridge board and cowl, so that all the roof could be fixed on the orchard-house principle, or easily moved on the Beard or the groove principle. As stated above, if lean-to, the houses should face the south; if span-roofed the slopes should more or less face due east and west. We would advise that the Vines be planted inside in either case; but if a wide-span house we would have a border inside and outside too if convenient. The simplest mode of doing so is to build the front wall on arches or piers. The latter would answer very well with a stone or iron sill if you had front lights for ventilation. If the ventilation is to be in the wall, then an arched wall would be best.

Briar Tops Covering—Roses Pruning (*T. G.*).—The tops of the Briars should be pruned smooth, and may be brushed over with patent knotting, such as painters use. We consider the end of February not too early to prune Roses, but for a late bloom pruning may be advantageously done at the commencement of March.

Box for Edgings (*J. J.*).—Now is a good time to put in cuttings of Box, slipping off the pieces, and inserting them with 1 or 2 inches of the top out of the soil. The top should not be pruned; merely remove any irregularities of growth. Many evergreen shrubs may be propagated in the same way; but the best time to put them in is at the end of summer when the growth is complete, say the end of September. Water the Box if the weather be dry after planting, and afterwards in dry weather until it is growing freely.

Selections of Plants for North Wall, &c. (*H. S. N.*).—*Six Climbers for a north wall* are Ampelopsis hederacea, Hedera hibernica (canariensis of some), H. Rægneriana, H. Helix foliis variegatis, H. Helix aurea, and Cotoneaster microphylla. Ivies are the most suitable subjects for a north wall. *Twenty-four Hybrid Perpetual Roses* may be Achille Gonod, Alfred Colomb, Baronne Prevost, Camille Bernardin, Caroline de Sansal, Charles Lefebvre, Comte de Nanteuil, Dr. Andry, Duc de Rohan, Elie Morel, Gloire de Santenay, John Hopper, Lady Suffield, Louise Peyronny, Madame la Baronne de Rothschild, Madame Victor Verdier, Maréchal Vaillant, Paul Verdier, Pierre Notting, Princess Mary of Cambridge, Senateur Vaisse, Vainqueur de Goliath, Victor Verdier, and William Griffiths. *Six Golden Tricolor Pelargoniums*—Achievement, Lucy Grieve, Sunray, Jetty Lacy, Lady Cullum, and Miss Watson *Six Golden and Bronze*—Edward George Henderson, Egyptian Queen, Fascination, Masterpiece, President, and Trojan. *Six Silver Tricolors*—Mrs. John Clutton, Excellent, May Queen, Picturata, Italia Unita, and Cherub. *Six Vines for a cold house*—Buckland Sweetwater, Black Hamburgh, Black Champion, Trentham Black, Foster's White Seedling, and General della Marmora. *Twelve shrubs for an east aspect*—Aucuba japonica, Berberis Aquifolium, common and Portugal Laurel, tree Box of sorts, Hollies, Cotoneaster Simmondsii, Philadelphus coronarius, Ribes sanguineum, Lilacs, Sambucus racemosa, and Skimmia japonica.

Arrangement of Houses (*R. T. G.*).—There can be no objection to the proposed arrangement as it is given, and no doubt the propagating pit would be useful. In either case you might plant Vines at the back of the vinery, but if the hipped roof were contrived to form the span of the same slope as the other side, there would be more room for the Vines. The Vines against the back wall will not succeed there unless the glass roof be but moderately covered. They will fruit well when they reach the glass. We have seen Vines do admirably when planted thus on the north side, and trained down the glass in a lean-to house. We prefer that a span-roofed house for a vinery should have its sides east and west, and its ends north and south.

Planting and Pruning Young Vines (*A Subscriber*).—If you are afraid that the young Vines would bleed if pruned back to the necessary length now, we would let them alone, but as soon as the buds lengthen, say half an inch or so, you may rub off all you do not want, but you must not cut them off; that will cause bleeding, but the rubbing off with the thumb and finger will not. When the Vines have started and made a foot of young wood, you may prune back safely as you propose, but by that mode you will be apt to check the Vine more, and lose so much more for the main shoot, than by the above mode of rubbing off the started buds.

Forcing Strawberries (*Fifteen-years Subscriber*).—To succeed in forcing Strawberries well, the following simple matters will have to be attended to, and, for the sake of simplicity, we shall confine ourselves to one mode. First, as soon as you can obtain runners, however small, from a fruitful Strawberry plant, place the runner with its incipient roots in a small pot (60-sized), with a pebble in it to keep the runner in the rich light soil. Water frequently until the pot is full of roots. When it is so filled cut the runner, take away the plants in the pots, and let them stand in a shady place for a few days. Then shift these well-rooted plants into 5 or 6-inch pots, using rich stiff soil, and keeping the bud of the plant nearly level with the rim of the pot. Make the soil all round the ball as hard as you well can with fingers and a stick. Most likely the pots will need a little shade for a few days after potting, but after that the plants cannot have too much sun, and the pots should stand on a hard bottom. When the pots become crammed with roots use manure water of various kinds freely, provided it is not too strong, for too strong doses are to be avoided. As autumn advances let the plants have all the sun possible, but diminish watering that the buds may be well ripened. In winter, if the pots can be protected from frost, snow, and excessive rains, it will all be in favour of the plants. In cold places in the north it is often advisable to prick out small runners, let them have a summer's growth, and take them up next summer and pot for forcing.

Wireworms (*T. Mayes*).—It is very difficult to eradicate wireworms when they find their way in such abundance into an orchard house. We are of opinion that the modes suggested by you would greatly reduce, if not exterminate, the enemy. Meanwhile, as the time has gone on and nothing has been done, we should be inclined to give a good watering with guano, or with soot water, which would make the wireworms a little uncomfortable, and then insert all over sliced Carrots, and examine the baits every day.

Buckwheat (*J. Bell*).—Sow in April; three pecks will be enough seed for your half acre if you drill it in; keep it hoed. No special culture is needed, and on rich land it runs too much to stem. It succeeds even in Russia. The seed will be ripe by the end of October. Pull up the plants, for the seed sheds very readily.

Ants (*A. C.*).—Soak their haunts for a few days successively with ammoniacal liquor from the gas works. "The Poultry Book for the Many" will suit you. You can have it free by post from our office if you enclose seven postage stamps with your address.

Plants for Cover in Boggy Soil (*P. C.*).—Few shrubs would succeed in boggy soil unless it could be drained. In this case you might grow Berberis Darwinii, B. repens, B. Aquifolium; Rhododendron ponticum, Aucuba, common Laurel, evergreen Privet, St. John's Wort, common Berberry, Black Thorn, common and red-berried Elder, Hazel, Ribes, Snowberry, Sweet Briar, and Pampas Grass. With the soil not drained you will find few shrubs will grow, but you may plant the Alder (Alnus glutinosa), the cut-leaved variety being very fine. Both the common Dogwood (Cornus mascula), and the red (C. sanguinea), do very well. C. mascula variegata has finely-variegated leaves. Guelder Rose (Viburnus Opulus), is also good, and especially V. Opulus nanum, also Deutzia scabra. To these may be added Willows; the American, Palm, Bedford, Cane, Norfolk, and common, Red, and Yellow Osier, are all good, and should be cut down frequently. Cover being the object, few things equal the common Sedges. They make excellent cover, and so do most of the Reeds. Of flowers, in the open spaces employ Caltha palustris and the double variety, Myosotis palustris, Water Iris, and the Epimediums, with other semi-aquatic plants, which you may, no doubt, find in your immediate locality.

Abutilon venosum Treatment (*B. B*).—That is the name of the plant of which you enclose a leaf and flower. It requires ordinary greenhouse treatment, and is a good plant for covering walls or trellises. A compost of two parts sandy fibrous loam, and one part leaf soil, with a liberal admixture of sharp sand and free drainage, will grow it well. Repot at once, and to secure shoots for covering the wall take out the points of the shoots to induce more branches. It should have a light airy position, otherwise it will not flower freely. It is very pretty, and well worth a place in every greenhouse. Water should be plentifully given when growing, but none should be supplied so long as the soil remains moist, but when it becomes dry, and before the foliage flags, give a good watering, sufficient to show itself at the drainage.

POULTRY, BEE, AND PIGEON CHRONICLE.

MANAGEMENT OF POULTRY AT SHOWS.

Had I the arrangement of any show my plan would be the following. I would arrange the regulations so that the latest time for admission of specimens should be dusk on the previous day. If birds arrived before, I would provide some means of thoroughly darkening the exhibition room. If this could be done thoroughly, specimens might be taken in at any time, as with scarcely any light the birds would remain passive on the bottom of the basket or pen, and allow themselves to be quietly handled. In handling fowls I believe the best way is to take the bird round the shoulders with both hands, the thumbs uppermost, keeping the wings from moving.

As to Geese, Turkeys, and Ducks, the last-named may be treated and handled as fowls. The two former, if the pens are on the ground, may, by a gradual and slow tilting of the hamper, be made to walk into the pen; but in these larger specimens the feathers are so much stouter and the plumage so much less easily injured, that there is not the same fear of mischief.

Much, very much, depends on whether a bird is accustomed to being handled, and it is wise for exhibitors to handle their specimens frequently, as they are thus rendered tamer.

One word more. It is far better that shows should close early on the last day, that the last meal for the birds should be bread soaked in ale or gravy, and that the specimens should be packed at once—if there is a night train, to be forwarded by it; if not, by the earliest in the morning.

I see at Northampton the committee promise that the birds shall be sent off the following morning "after being well fed." Now, if well fed means hard food, I would much sooner my birds were dispatched fasting, and I believe less injury would be done.—Y. B. A. Z.

HANDLING POULTRY.

If I were to take hold of a Game cock, I would put my right hand on his back and secure his wings. I should object to taking an old cock by the legs first, as his spurs are rather troublesome. I would secure the wings of all birds first, Geese and Turkeys not excepted. When you have a bird between your hands, then remove it from the hamper or pen, and there will be no fear of damage. I do not approve of taking hold of the head, and I hope neither does "R. D."—C. P.

ARE THE OFFICE-BEARERS OF A SOCIETY RESPONSIBLE FOR ITS DEBTS?

In the case of Mrs. Helen Grassick, Oriel Cottage, Edinburgh, against Mr. John Baillie, Treasurer of the Aberdeen Poultry Club and Pigeon Association, and against Wm. Grant, the Secretary, William Hay and James Anderson, Vice-Presidents of the Club, whereiu the pursuer sues the defenders for the sum of £2 12*s*., being the amount of four prizes gained by the pursuer for fowls belonging to and exhibited for competition by her at the exhibition and competition for poultry held by the said Association in December, 1869, the prizes being awarded to her by the Association, or their office-bearers, or officials, or judges. Sheriff Comrie Thomson has just given judgment. It will be remembered that Mrs. Grassick got a Small Debt decree in her favour for the amount against the Association, but, it being found that it was impracticable to put it in force against the Association, there being no funds, she raised this action in the ordinary Court against the defenders as office-bearers, the contention being that they were responsible for the debts of the Association. The Sheriff in his interlocutor finds that no relevant ground of liability by the defenders has been set forth in the summons, and therefore dismissed the action, holding the pursuer liable for expenses. In his note the Sheriff says—It was not averred that the Aberdeen Poultry or Pigeon Association was a mercantile copartnery carried on for the purpose of gaining profit. It was plainly of a different nature; and the Sheriff-Substitute was of opinion that the well-known rule of law that "each partner is responsible for the whole debts of a trading company" did not apply.

[The above is extracted from a Scotch newspaper, and we think Mrs. Grassick failed because she sued wrong parties. If she had had the usual correspondence, written or printed, with the Secretary or any other officer or member of the Committee, and had sued that correspondent in the Small Debt Court, we think she would have recovered the £2 12*s*. She did obtain a decree against "the Association," but the Sheriff's-Substitute rightly decided that such Association is not a sueable partnership.]

OUTRAGES ON PRIZE BIRDS.

I sent a valuable Black Red cock to Wolverhampton on the 2nd ult. He was seen there in perfect feather on the 4th, but although not noticed in the prize-list, some one evidently considered him a possible winner on some future occasion, for he was returned to me with both sickle feathers broken short, and one of the smaller sickles plucked out. I wrote to the Secretary requesting him to use every possible means for the discovery of the offender, and authorising him to offer a reward of £5 for information which would lead to a conviction, and received a reply, saying that he "is sorry to hear that the bird is injured," but "is certain it was not done there," and promising to "make every inquiry, and write me again." How Mr. Barnett happens to be able to speak so confidently of the injury not having been done at the Show I cannot understand. If this nuisance continue to increase, all respectable persons will cease to exhibit, and the poultry sharks will be left to mutilate each other's birds. Will some one take the matter up, and try to establish a fund for the purpose of offering a tempting reward for the detection of similar offenders?—Edwin Brough, *Leek*.

Our Journal has contained several communications on this very important subject. Since November I have suffered in this way rather seriously. To begin with the Southampton Show, I there exhibited a Malay cockerel in the Variety class, obtaining the second prize. Now, in this case the sickle feathers were not fully grown, and would, if untouched, have lasted till August or September next, and nothing but foul play would have removed wholly one of these feathers; yet on his return, one sickle feather was clean gone, root and branch. Then I sent a second Malay cockerel to Birmingham, where he was unnoticed; he had been twice exhibited by me before, taking the first prize at Whitworth and Rochdale, and the second prize at Middleton, and from both these shows he returned with tail undamaged. From Birmingham he returned with both sickle feathers broken off, one hanging, the other not to be found in the basket, which was lined, and the same in all three cases. Lastly, I exhibited at Bristol an old Malay cock, with sickle feathers scarcely yet at full growth after moult. He was at the head of the Any other Variety class, and he too has returned to me with both sickle feathers broken off.

Now, supposing all these misfortunes to be accidental, it is singular (perhaps I am hardly correct in writing this term in my case), but it is strange, that three cases should occur in the same small yard in three months. Possibly I am now going to touch on somewhat dangerous ground, but the conclusion is rather forced on me. Firstly, I would suggest to judges that their handling of specimens should be as little as possible, and that in most of the classes it is wholly unnecessary. I shall probably be hooted at as heterodox! Well, that will not hurt me, my opinion remains the same; but allowing that some amount of handling is necessary in awarding the prizes—that being over, all handling ought to cease, except by the owners themselves, or in their presence, or, as a matter of appeal, judicially by the committee. I have, however, seen a judge giving a perfect lecture on the intricacies of a breed to an exhibitor on the day when the exhibition was opened to the public, and taking out bird after bird in a manner which I confess I thought at the time too rough, and which with wild birds might easily produce the annoying accidents alluded to. Secondly, sticks should be left at the doors by visitors. Lastly, I think such accidents would often be avoided if all the packing and unpacking of the birds were performed with the light almost excluded from the building.

I am quite aware that our railway officials are not too careful over our specimens. I therefore always send mine in round hampers lined carefully.—J. Hinton, *Warminster*.

POULTRY KILLED BY A DOG.

As the law respecting the destruction of poultry by dogs does not seem to be generally known, the following may be interesting to many of your readers:—

"The general rule of law is that the owner of a dog is not liable for any injury committed by it to the person or to personal property, unless it can be shown that he previously had notice of the animal's mischievous propensity, or that the accident was attributable to some other neglect on his part." Fowls being personal property, it follows that a dog may enter a poultry-yard, and destroy any number of valuable fowls, and the owner of the fowls is without remedy against the owner of the dog, unless he can prove that the mischievous propensity of the dog was known to its owner, or that the latter has been guilty of some neglect.

Dogs chasing conies in a warren, game in a preserve, deer in a park, sheep in a fold, or fowls in a poultry-yard may be killed whilst in hot pursuit, but not afterwards.

A case, which clearly shows the injustice of this state of the law, was recently tried in the County Court at Stockton-on-Tees. A pointer dog, whilst being used in sporting, ran away from its master into a neighbouring town, where it roved about for some days. At length, being hungry, or from some other cause, it effected an entrance into a poultry-yard, and destroyed four very valuable Cochin fowls. The owner of the property sued the owner of the dog, and tried to show that the latter had been guilty of negligence in losing his dog, and allowing it to range about a town so long without food. The Judge, however, held that losing a dog was not such negligence as would render the owner liable, and nonsuited the plaintiff, with costs.—*

[We incline to the opinion that if the plantiff had sued for the dog's trespass he might have recovered.—Eds.]

BIRMINGHAM FLYING MUFFED TUMBLERS.

I think that I can solve the mystery of the origin of these Tumblers, professed by the Birmingham fanciere, or flyers of these Pigeons, to be unknown to them.

My conjecture is that the common Antwerp Pigeon, not the Antwerp Carrier, a grizzled or strawberry-feathered bird with pearl eyes and not unlike the Tumbler in form, is one ancestor in a cross with the European Tumbler as the other ancestor of these Pigeons, and improved by another and third ancestral cross with the English Tumbler for symmetrical specimens. Thus we have the Antwerp's powers of flight (notorious), the muffed leg of the European Tumbler, and the symmetry of the English Tumbler, more or less developed in these Birmingham Tumbler Pigeons. I found my conjecture upon the fact of the Antwerp, in Lancashire called "White Eye" from its wild white eye, being a superb flying bird over home. Indeed the Lancashire Pigeon-race flyers use a cross of the White Eye and Dragoon for their sport. But the pure White Eye is kept in crews for high flying, and soars into the clouds and flies in circles almost invisible for one, two, or three hours, over home consecutively. If confined too long without a fly, these White Eyes are apt (as did a crew the other day not half a dozen miles from me) to soar out of sight and disappear for ever—maybe go back, from some innate instinct, to the home of their fathers, the city of Antwerp, for, save a few stragglers, they are heard of no more. Such is the White Eye, the blood of which I surmise to be in the Tumblers under notice. Tumblers the Birmingham birds are and something more, being, I should say, Anglo-Hybrid-Antwerp Flying Tumblers, a designation they need not shame to own in their exemplification of the characteristics implied.

As matter appropriate to our subject I will relate an anecdote of the Antwerp Carrier Pigeon. A calico printer, who spent some time in Belgium, brought a few pairs of these birds to his home in England near Manchester, and kept them in confinement until they had bred him a young stock, for certainty, as he thought, of settling old and young birds safely. Conceive his surprise when, the first time the old birds rose into the air, they darted away regardless of the young birds behind, which alone remained, and, as he concluded, were lost. But lost they were not, for they flew home into Belgium, and this after a sojourn of twelve months and one breeding season in England!

The same person gave a pair of the young birds (the young birds I mentioned) to a friend, who transported them to his own loft, some twenty-five miles distant, and the first flight—they had never flown before—made by these young Antwerp Carriers was to the place of their birth, over several towns and a range of hills of no inconsiderable height. So is demonstrated the instinctive homing faculty of the Antwerp Carrier, for these very birds were not trained birds, and yet the old birds crossed a great part of England and the Channel into Belgium, and their young nestlings traversed twenty miles or more of inland route safely, the face of the earth in each instance being unknown to old and young birds alike.—Reader.

COLCHESTER POULTRY SHOW.

This took place on the 1st and 2nd inst., and consisted of nearly three hundred entries of poultry, and upwards of one hundred entries of Pigeons, besides Rabbits. The awards were as follows:—

Dorkings.—*Coloured.*—1, Henry Lingwood, Barking, Needham Market. 2, F. Parlett, Great Baddow. *hc*, Mrs. G. Meek, Balcombe; J. Norman; W. Tippler, Roxwell, Chelmsford; J. Frost; Mrs. G. Clarke, Long Sutton. *c*, J. Norman; J. Frost, Parham. *White.*—1 and 2, J. Robinson, Garstang. *c*, Rev. F. Tearle, Gazeley Vicarage, Newmarket.

Cochins.—*Cinnamon and Buff.*—1 and *c*, Henry Lingwood. 2, J. K. Fowler, Aylesbury. *Any other Variety.*—1, T. Sharpe, Ackworth, Pontefract (Partridge). 2, Horace Lingwood, Creeting, Needham Market (Partridge). *c*, J. H. Dawes, Moseley Hall, Birmingham; Horace Lingwood (Partridge).

Brahmas.—*Dark.*—1, Horace Lingwood. 2 and *c*, H. Dowsett, Pleshey, Chelmsford. *hc*, W. Burrows, Diss, Norfolk; Horace Lingwood. *Light.*—1, H. Dowsett. 2, Mrs. A. F. Barnett, Erdington.

Spanish.—1, Nichols & Howard, Camberwell. 2, F. James, Peckham Rye. *hc*, E. W. Shalford, Maidstone; W. Saunders, Lowestoft.

French (Any variety).—1, W. Burrows, Diss (La Flèche). 2, Mrs. J. Cross, Appleby Vicarage, Brigg (Crève-Cœur) *hc*, W. Boutcher, Notting Hill (Crève-Cœur); Mrs. E. Williams, Henllys, Berriew (Crève-Cœur); W. Tipoler (Houdans and Crevecœur); W. Dring, Faversham (Crève-Cœur). *c*, J. K. Fowler; A. H. Paley, Dedham (Houdan); W. Dring (Houdans).

Game.—*Black-breasted and other Reds.*—1 and 2, S. Matthew, Stowmarket. *c*, G. Barton, Wymondham; H. F. Martin, Sculthorpe, Fakenham; R. Hull. *Duckwing and other Greys and Blues.*—1 and 2, S. Matthew. *c*, J. H. Salter, Tolleshunt D'Arcy, Kelvedon. *Any other Variety.*—1 and 2, S. Matthew (Piles). *hc*, J. H. Salter (Piles). *c*, J. J. Hazel, Great Bromley, Manningtree.

Hamburghs.—*Gold-spangled.*—1, L. Wren, Lowestoft. 2, Mrs. Pattisson, Maldon. *Silver-spangled.*—1, H. Pickles, jun., Earby. 2, H. M. Maynard, Holmewood, Ryde. *c*, Rev. F. Tearle; C. Turner; Mrs. Pattisson. *Gold-pencilled.*—1 and *c*, H. Pickles, jun. 2, W. Tickner. *Silver-pencilled.*—1 and 2, H. Pickles, jun.

Polands (Any variety).—1, W. K. Patrick, West Winch, Lynn (Golden). 2, J. Hinton, Warminster (Silver). *hc*, H. Pickles, jun. (Silver); W. K. Patrick (Golden). *c*, W. K. Patrick (Golden); W. J. Woodhouse, West Winch, Lynn (silver).

Game Bantams.—*Black-breasted and other Reds.*—1, W. B. Jeffries, Ipswich. 2, E. Cambridge, Cotham. *hc*, W. B. Jeffries; H. L. Cocksedge, Bury St. Edmunds; Nichols & Howard. *Any other Variety.*—1, Rev. F. Cooper (Duckwing). 2, Hon. E. Gifford, Ampney Park, Cirencester (Duckwing). *hc*, R. Swift. *Any variety except Game.*—1, M. Leno, Markyate Street (Laced). 2, E. Cambridge (Black). *hc*, Rev. F. Tearle (White); H. M. Maynard (Black); S. and R. Ashton, Mottram.

Any other Variety.—1, Rev. A. G. Brooke, Shrawardine (Malay). 2, W. Wildey, Cosham (Andalusian). Extra 3, W. Massey, Spalding (White Leghorn).

Ducks.—*Rouen.*—1 and 2, J. K. Fowler. *c*, Mrs. E. Wheatley, Ingatestone. *Aylesbury.*—1 and 2, J. K. Fowler. *hc*, Mrs. Pattisson; H. S. Wiggins, Stowmarket; W. Tippler. *Any other Variety.*—1 and 2, M. Leno (Viduata Whistling Duck and Mandarin). *c*, S. & R. Ashton.

Selling Class.—1, H. Dowsett (Brahma). 2, J. Mansell, Longton, Staffordshire (Spanish). *hc*, J. F. Sillictoe, Wolverhampton (Spanish); H. H. Thompson, Coleshill, Farringdon (Gold-pencilled Hamburgh); S. Felgate, Langham, Essex (White Cochins). *c*, G. Barton (Brown-breasted Red Game) (2); H. M. Maynard (Light Brahma); H. S. Wiggins (Coloured Dorking); J. Norman (Coloured Dorking); E. W. Shalford (Black Spanish); W. J. Woodhouse (Black Red Game).

Selling Class.—1, J. Frost (Coloured Dorking). 2, H. Dowsett (Brahma). *hc*, T. Rogers, Walsall; J. Norman (Coloured Dorking) (2); E. W. Shalford (Black Spanish) (2); D. C. Campbell, M.D., Brentwood (Dark Brahma). *c*, C. Turner, Great Baddow (Silver-Grey Dorking).

PIGEONS.

Carriers.—1, H. Yardley, Birmingham. 2, F. W. Metcalfe, Cambridge.

Pouters.—1, P. H. Jones, Fulham. 2, Withheld.

Tumblers.—*Almond.*—1, 2, *hc*, and *c*, J. Ford, Monkwell St., Loadon. *Any other Variety, Short-faced.*—1 and *c*, J. Ford. 2, P. H. Jones (Kite).

Owls.—1 and *hc*, P. H. Jones. 2, H. Yardley.

Fantails.—1, H. M. Maynard. 2, P. H. Jones. *hc*, H. Yardley.

Jacobins.—1, W. E. Easten, Hull. 2, R. Richardson, Beverley.

Turbits.—1, R. W. Richardson. 2, G. H. Gregory, Taunton. *hc*, H. Yardley. *c*, T. Holmes, Lower Sydenham.

Barbs.—1, H. M. Maynard. 2 and *hc*, H. Yardley. *c*, P. H. Jones.

Nuns.—1, H. Yardley. 2, W. E. Easten.
Trumpeters.—1, P. H. Jones. 2. E. Sheerman, Springfield, Chelmsford.
Magpies.—1, H. Yardley. 2, P. H. Jones.
Dragoons.—1, J. Mitchell. 2, A. W. Wren, Lowestoft.
Archangels.—1, J. Bowes. 2, H. Yardley.
Antwerps (Best pen of four working).—1, H. Yardley. 2, H. Laver.
Any other Variety.—1, S. A. Wyllie, East Moulsey (Runts). 2, H. Laver, Colchester (Silver Runts). *hc*, Hon. Mrs. Paget, Scole (Starlings and Isabels). *c*, J. Mitchell (Tumbourettes); J. F. Bishop (Porcelains).
Selling Class.—1, C. Norman (Black Trumpeter). 2, H. S. Wiggins (Pouters). *hc*, L. Wren (Black Carriers). *c*, Hon. Mrs. Paget (Black Fantails and Starlings); H. Yardley; W. Bulmer, Spalding (Barbs); E. Sheerman (Trumpeters).

RABBITS.

Lop-eared (Any variety).—1 and 2, C. Gravil, jun., Thorne. (Whole class highly commended).
Himalayan.—1, W. Wood, Sible Hedingham. 2, S. G. Hudson, Hull.
Angora.—1, D. P. Gooding. 2, J. Boyle, jun., Blackburn. *hc*, C. King, St. John's Wood (2).
Any other Variety.—1, J. Allen, Ampthill (Silver-Grey). 2, S. G. Hudson (Silver-Grey). *hc*, J. R. Lunn, Hull (Silver-Grey). *c*, J. Boyle, jun. (Silver-Grey); S. G. Hudson (Silver-Grey).

Judges.—Mr. W. B. Tegetmeier and Mr. F. Esquilant.

THE BIRMINGHAM PHILOPERISTERON SOCIETY.

This was the sixth annual Show of the above Society, and as all its members are ardent breeders of fancy Pigeons, it has gradually progressed until very few shows can boast of classes so regularly well filled with first-rate specimens as this usually has. As a consequence, the competition is very close, and the decisions of the Judges are always very closely scanned. We may add that, for a spring exhibition, the entry of so many first-rate birds was almost without parallel.

The Carrier classes were, on the whole, the best the Committee has ever obtained, particularly the birds of last year's breeding. Mr. While took the first position with a most promising Dun, which, if no accident arise, will doubtless show to very great advantage in future years. The Black hen shown by Mr. F. Smith is not less worthy of especial mention. This gentleman took a silver cup with a grand pair of Barbs, the only entry in the class, and we strongly suspect the "utter hopelessness of winning" was the cause of so limited an entry, as exhibitors appear well to know who is in possession of first-class birds. Mr. Harry Adams, of Beverley, sent two pairs of Almonds that would be an honour to any breeder; the first pen were silver-cup winners, but the second-prize pen would have been an uncomfortably close run had the two not belonged to the same breeder. Everyone admired them. Dragoons and Antwerps were exceedingly good, and the display of Toy Pigeons was better than usual, several very choice newly-imported varieties being shown. It was remarkable that although the class for Fantails was by no means small, the generality of the birds were sadly rubbed in feather.

Carriers.—*Young Birds.—Black* or *Dun.*—1, J. F. While. 2, 4, and *c*, G. F. Whitehouse, King's Heath, Birmingham. 3 and 5, W. H. Mitchell, Moseley. *hc*, J. F. While; G. F. Whitehouse; J. Linnett, jun., Coventry; W. H. Mitchell. *Any other Colour.*—1, J. Watts, King's Heath. 2, Withheld.
Carriers.—*Black.—Cocks.*—1, F. Smith, Selly Oak, Birmingham. 2, G. F. Whitehouse. 3, W. H. Mitchell. *c*, T. Robson, Penkridge. *Hens.*—1 and Cup, F. Smith. 2, G. F. Whitehouse. 3 and *hc*, W. H. Mitchell.
Carriers.—*Dun.—Cocks.*—1, G. F. Whitehouse. 2, J. F. While. *hc*, W. H. Mitchell. *Hens.*—1, G. F. Whitehouse. 2, J. Watts. *c*, W. H. Mitchell.
Carriers.—*Any other Colour.—Hens.*—1, J. Watts. 2, Withheld.
Pouters. *Cocks.*—1 and 2, G. Sturgess. 3, J. Watts. *Hens.*—1 and 2, G. Sturgess. 3, J. Watts
Fantails.—1, J. F. While. 2, J. W. Edge, Birmingham. 3, H. Adams. 4 and *hc*, Mrs. A. F. Barnett, Erdington.
Almonds.—1, 2, and Cup, H. Adams, Beverley.
Balds and Beards.—1. J. W. Edge. 2, no competition.
Short-faced (Any other variety).—1, H. Adams. *hc*, G. Sturgess.
Jacobins.—1 and 2, J. W. Edge.
Trumpeters.—1 and 2, T. Robson.
Owls.—*Foreign.*—1, J. Watts. *hc*, G. F. Whitehouse. *English.*—1, J. W. Edge. 2, J. Watts. 3, Mrs. A. F. Barnett.
Turbits.—1, J. W. Edge. 2 and 3, T. Robson.
Barbs.—1 and Cup, F. Smith. 2, no competition.
Nuns.—1, J. Watts. 2, J. R. Bill, Birmingham.
Dragoons.—*Blue.*—1, J. Watts. 2, No competition. *Any other colour.*—1 and *hc*, J. Watts. 2, J. Coleman. *Single Birds.—Any colour.*—1, W. H. Mitchell. 2, G. F. Whitehouse. 3, J. Coleman. 4, J. Morris. *hc*, J. Coleman, West Bromwich (2); G. F. Whitehouse; J. Morris; W. H. Mitchell.
Magpies.—1, G. F. Whitehouse. 2, T. Robson.
Antwerps.—1, J. F. Cleveland. 2, W. H. Mitchell. *Cocks.*—1, W. H. Mitchell; 2, J. Watts. *hc*, J. E. Cleveland.
Swallows.—1 and 2, J. Watts.
Any other Variety.—1, 2, and Cup, W. Bankes. 3, J. Watts.
Single Birds (Fancy).—1 and 3, H. Adams. 2 and *hc*, J. Watts. 4, J. Morris.
Tumblers (Flying).—*Badges* (Black).—1, J. Massey, Lozells, Birmingham. (Blue).—1, J. W. Edge. *Mottles.*—1, J. Massey. *Single Birds* (Any variety).—1, J. Massey. 2 and 3, J. W. Edge.
Rosewings and Redbreasts.—1 and 2, J. Massey.

Mr. Edward Hewitt, of Sparkbrook, and Mr. Yardley, of Birmingham, judged all the strictly fancy varieties, and Mr. Walthew, of Birmingham, the flying Pigeons.

LEEDS ROYAL PARK BIRD SHOW.

A very aristocratic title certainly for a bird show, but a very happy one, as may be fully realised by a visit to the grand conservatory in the Park, containing so many beautiful plants and flowers, and so many fine birds of all classes, breeds, and colours, from the small Waxbills, Diamond and Coral-necked Sparrows, Indigo Blue-birds, Java Sparrows, Love-birds, and Parrakeets, to the larger kinds—viz., King Parrots, Grey and other Parrots, Cockatoos, and Great Macaws. Another visit to the above interesting place, situated about a mile and a quarter from Briggate in Leeds, increased one's familiarity with the Royal Park, with its finely laid-out walks, terraces, and grounds, the conservatory, the ponds containing gold and silver fish, the fountains, &c. Mr. Thomas Clapham, the Managing Director, devotes much time and attention to making the park what it is intended to be—a pleasant resort and place of recreation for the people.

The third annual Show opened in the large conservatory on the 4th inst. and will close to-day. The judging began on Friday morning, which was very foggy, but as the day advanced the sun shone with much power on the conservatory. The large tent or awning used at the recent Crystal Palace Show would have been of great service in screening the birds from the sun's rays, which fell with full force on the Norwich Canaries, the judging of which was delayed for the purpose of bringing home to the eyesight of the Judge the pure and natural colours of several of them as they *ought to have been*, not as *some* of them *were*. The publicity given to the "coloured specimens" at the late Crystal Palace Show, and the dastardly anonymous letter, bearing a Nottingham postmark, received by one of the Judges some time since, setting forth in elegant expressions the "ignorance of the Judges," did not deter the deep-dyed specimens (Norwich, and a Golden-spangled Lizard) from being shown and detected. Besides a host of fine-bred Canaries exhibited by breeders from various and distant parts of England, representing all the well-known breeds excepting the Scotch fancy, there was a splendid collection of British and foreign birds. The following are the awards:—

Norwich.—*Clear Yellow.*—1, 3, and *hc*, Moore & Wynn, Northampton. 2, T. Irons, Northampton. *Clear Buff.*—1, 2, and 3, Moore & Wynn. *vhc*, Bexon and Bennett, Derby. *hc*, A. Webster, jun., Kirkstall; G. Tuckwood, Nottingham.
Norwich.—*Marked or Variegated Yellow.*—1, R. Hawman, Middlesbrough. 2 and 3, Moore & Wynn. *hc*, Moore & Wynn; J. Close, Derby. *c*, H. N. Fosbrooke, Leeds. *Marked or Variegated Buff.*—1 and 2, Moore & Wynn. 3, W. Heap, Bradford. *hc*, Bexon & Bennett; G. Tuckwood; Moore & Wynn.
Norwich.—*Ticked or Unevenly-marked Yellow.*—2 and 3, Moore & Wynn. *Ticked or Unevenly-marked Buff.*—1 and 2, Moore & Wynn. *vhc*, T. Irons; G. Tuckwood.
Norwich.—*Crested Yellow.*—1, R. Hawman. 2 and *vhc*, Moore & Wynn. *Crested Buff.*—1 and 2, Moore & Wynn. *vhc*, H. N. Fosbrooke. *hc*, Bexon and Bennett.
Belgian.—*Clear Yellow.*—1, J. Close. 2, P. Rawnsley, Lidget Green, Bradford. *vhc*, J. N. Harrison. *Clear Buff.*—1, J. Close. 2, P. Rawnsley. *Variegated or Ticked Yellow.*—1, P. Rawnsley. 2, J. Close.
London Fancy.—*Jonque.*—1 and 2, C. Clark, Sutton, Surrey. *Mealy.*—1, T. E. Foster. 2, C. Clark.
Lizard.—*Golden-spangled.*—1, J. N. Harrison, Belper. 2, G. Tuckwood. 3, Stevens & Burton, Middlesbrough. *vhc*, P. Rawnsley. *Silver-spangled.*—1, J. N. Harrison. 2, Stevens & Burton. 3, G. Tuckwood. *c*, W. Heap.
Cinnamon.—*Jonque.*—1 and 2, T. Irons. *vhc*, Moore & Wynn; J. Spence; G. Cox, Northampton. *Buff.*—1 and *vhc*, T. Irons. 2, Moore & Wynn. *Marked or Variegated* (irrespective of Colour).—1, R. Hawman. 2, J. H. Hadland, Wallington. *hc*, Moore & Wynn.
Any other Variety.—1, Fairclough & Howe, Middlesbrough. 2, W. Heap, Bradford. 3, Stevens & Burton. *vhc*, Moore & Wynn; R. R. Hammond, Bradford.
Goldfinch Mule.—*Variegated Yellow.*—1, Stevens & Burton. 2, W. Chesney, Rudness, Goole. 3, W. L. Chapman, Northampton. *vhc*, P. Rawnsley. *Variegated Buff.*—1, Fairclough & Howe. 2 and 3, W. Barnes, Cannon St., London. *vhc*, W. Barnes; P. Rawnsley. *hc*, W. L. Chapman
Goldfinch Mule.—*Dark Jonque.*—1, W. Heap. 2, Stevens & Burton. *vhc*, T. E. Fosbrooke, Leeds; Moore & Wynn; W. Smith, Birmingham; G. Cox. *Dark Mealy.*—1, W. L. Chapman. 2, W. Smith. *vhc*, W. Heap.
Goldfinch Mules (Six in one cage).—2, W. Heap. 3, E. W. Lulham, Brighton.
Linnet Mule.—1, J. Spence, Sunderland. 2, W. Heap. *vhc*, W. E. Burniston, Middlesbrough.
Bullfinch.—1, W. Heap. *vhc*, A. Webster, jun.; G. Cox. *hc*, W. Smith.
Goldfinch.—1, W. Smith. *vhc*, J. N. Harrison; Fairclough & Howe; J. Spence.
Linnet.—1, J. Spence. *vhc*, A. Webster, jun.; J. N. Harrison; W. E. Burniston; Fairclough & Howe.
Skylark.—1, T. Haunan, Leeds.
Robin.—1, G. Cox.
Blackbird.—1, A. Webster, jun.
Starling.—1, Royal Park Company.
British Birds (Any other variety).—1, A. Webster, jun.
Birds of Passage and Migratory Birds.—*Blackcap.*—J. Bem, jun., Upper Wortley, Leeds. *Siskin* or *Aberdevine.*—1, A. Webster, jun. *British Birds* (six in one cage).—1, T. E. Fosbrooke.

FOREIGN BIRDS.

Cockatoos.—*Lemon* or *Orange-crested.*—1, Royal Park Company (2). *Leadbeater or Rose-breasted.*—1, E. Foster, M.D.
Parrots (Grey).—1, Royal Park Company.
Love Birds.—1, W. Brownridge, Leeds.
Parakeets.—*Australian Grass.*—1, Royal Park Company. *Roschill.*—1, W. Brownridge.
Small Parrots or Parakeets (Any other variety).—1, Royal Park Company.
Cocketeals.—1, Royal Park Company.
Lory (Any variety).—1, Royal Park Company.
Sparrows.—*Diamond.*—1, Royal Park Company. *Coral-necked.*—1, Royal Park Company. *Java.*—1, A. Webster, jun.
Nightingales (Virginian).—1, Royal Park Company.
Cardinals.—1, Royal Park Company.
Foreign Birds (Any other variety).—1, Royal Park Company (Blue or Indigo and Macaws).

Judge.—Mr. George J. Barnesby, Derby.

BAILDON ORNITHOLOGICAL SOCIETY'S SHOW.

This was held on the 24th and 25th of February. The thanks of the Committee and visitors are due to the ladies of Baildon for so tastefully decorating the room. Messrs. Garnett and Fawcett, Hon. Secretaries, with their assistants, paid the best attention to the specimens sent for exhibition, and a better prize-list is promised for another season. To their praise be it said, they despatched the catalogues to exhibitors promptly.

The first and second-prize Yellow Belgians were very good, but the second too rough and coarse in the feather. The first-prize Buff Belgian was very beautiful, and was closely followed by other good

birds. The Jonque and Mealy Norwich were not up to the standard but better than have been shown before. The first-prize bird in the Ticked or Variegated Class is celebrated. The Clear-crested Coppy were really first rate; the first-prize bird was a splendid Yellow, and the second not far behind. In Dark or Grey-crested, the first and third were really good birds, the second-prize going to a good Dark-crested Coppy. Clear Yorkshire were of the very best, and were all highly commended. In Evenly-marked Yellow Canaries, the first was a faultless bird. In Evenly-marked Buffs, the first-prize bird was very truly marked on the eyes, wings, and tail, and the tail feathers were its own! The prize Cinnamons were a very fair lot. In Gold or Silver-spangled Lizards, the first bird was a splendid Silver. In Evenly-marked Goldfinch Mules, the first-prize bird, Buff, distanced all shown. In the Selling Class for the township of Baildon only, there were many good and cheap birds, and they changed owners very quickly; Dark Mules only were scarce. The third-prize bird was good, but pied on the breast. In Any other Variety of Mules, a Linnet Mule was first, and the second prize was taken by a Bullfinch and Goldfinch Mule. The Goldfinches would have been thought a nice lot, providing the first-prize bird had not been there; he put them all completely in the shade. Linnets were good. In the class for Any other Variety of British Birds, a really splendid Mountain Finch won easily.

Belgian.—*Clear Yellow.*—1, J. Ellis, Baildon. 2, H. Greenwood, Booth Town, Halifax. 3, W. Shackleton, Ilkley. *Clear Buff.*—1, H. Greenwood. 2, W. Shackleton. 3, J. N. Harrison, Belper.

Norwich.—*Clear Jonque.*—1, Moore & Wynn, Northampton. 2, J. Cockshott, Bingley. 3, G. Midgley, Bocking. *Clear Buff.*—1 and 2, Moore & Wynn. 3, W. Nowell, Baildon. *Ticked.*—1, R. Hawman, Middlesbrough. 2 and 3, Moore and Wynn.

Clear Crested.—*Coppy, Buff or Yellow.*—1, W. Shackleton. 2, Hutton and Fawcett. 3, J. Fawcett, Baildon.

Crested.—*Dark or Grey.*—1 and 3, Moore & Wynn. 2, W. Shackleton.

Yorkshire.—*Clear Yellow.*—1, W. Shackleton. 2, T. Pimperton, Baildon. 3, Hutton & Fawcett. *Clear Buff.*—1, Hutton & Fawcett. 2, J. Boddy, Baildon. , Fairclough & Howe.

Evenly-marked.—*Yellow.*—1, Stephens & Burton, Middlesbrough. 2, R. Hawman. 3, Hutton & Fawcett. *Buff.*—1, H. Greenwood. 2, Stephens and Burton. 3, J. N. Harrison.

Lizard.—*Golden or Silver-spangled.*—1, J. N. Harrison. 2, Stephens and Burton. 3, R. Hawman.

Cinnamon.—*Buff or Yellow.*—1, Moore & Wynn. 2, J. N. Harrison. 3, J. Spence, Sunderland.

Goldfinch Mule.—*Evenly-marked Buff or Yellow.*—1, W. & C. Burniston, Middlesbrough. 2 and 3, E. Stansfield. *Dark, Buff or Yellow.*—1, Stephens and Burton. 2, Moore & Wynn. 3, E. Stansfield. *Any other Variety of Mules.*—1, J. Spence. 2, E. Stansfield. 3, W. & C. Burniston.

Selling Class (Local).—1 and 2, Hutton & Fawcett. 3, J. Ellis.

Goldfinch.—1, J. Cockshott. 2, J. Spence. 3, N. Whitaker, Baildon.

Linnet.—1, W. & C. Burniston. 2, A. Webster, Kirkstall, Leeds. 3, Fairclough & Howe.

Any other British Bird.—1, A. Webster. 2, J. Sharp. 3, A. Pimperton.

Pigeons.—*Carriers.*—1, W. Lund, Shipley. 2 and 3, J. Watkins, Marden. *Dragoons.*—1, E. Beldon, Bradford. 2, T. Speight, Bradford. 3, W. Lund. *Turbits*—1 and 3, W. Lund. 2, H. G. Poole, Bradford. *Antwerps.*—1, W. Lund. 2, I. Lancaster. 3, J. W. Collinson, Halifax. *Owls.*—1, W. C. Dawson, Otley. 2, J. Thresh, Bradford. 3, H. C. Crowley, Bradford. *Tumblers.*—1, E. Beldon. 2, W. Lund. 3, F. Bentley, Baildon. *Any other Variety.*—1, W. C. Dawson. 2, E. Beldon. 3, W. Lund. (Local).—1, S. Jagger, Baildon. 2, W. Lancaster, Baildon. 3, W. Boocock, Baildon.

Judges.—*Canaries, &c.:* Mr. J. Taylor, Middlesbrough-on-Tees. *Pigeons:* Mr. W. Cannan, Bradford.

MULES AT THE CRYSTAL PALACE BIRD SHOW.

These were neither so numerous nor of such quality, on the whole, as last year, when they numbered 141 as against 87 this year. The great ambition of Goldfinch-Canary and Linnet-Canary Mule-breeders is to produce an absolutely clear bird—*i.e.*, one free from the taint of even a single dark feather—a task requiring the exercise of patience as great as that belonging to the patriarch whose possession of that attribute is proverbial; indeed, it is averred by many that it is only his lineal descendants who should attempt it. When it is taken into consideration that, to begin with, it is not easy to breed a Mule at all; that 75 per cent., or I might as well say 90 per cent., of those bred have not a single light-coloured feather other than the silky flue on the under part of the body; that not one in a hundred is decently marked; and not one in a thousand clear, or what is as difficult to obtain—exactly marked, having no foul feathers whatever, some idea of the magnitude of the lottery may be arrived at; and before investing in a Goldfinch, which may or may not feel disposed to enter into matrimonial relations with the Canary, one may well consult his genealogical tree in search of a strain of "staying" blood. There are instances on record in which a shilling lottery ticket has eventuated in a fortune, and there are traditions among the fancy, telling how this and that one bred a Clear Mule at the first attempt. One is as remarkable as the other, but those are not wanting who would attribute such good fortune to connection with a gentleman who is popularly represented as belonging to anything but a "Clear" class.

Such being the difficulties of the case, and such the exceedingly small per-centage of Mules approximating to perfection, it is evident that the balance of power, as regards numbers, is in the hands of the Ticked and Unevenly-marked classes, which, with the entirely Dark Mules, form the bulk of the population of this community of hybrids, including among them birds of extraordinary beauty, vastly superior in size, colour, deportment (there is a gentlemanly bearing about a well-bred Mule), and quality of plumage to many of those which base their claim to be ranked among the upper ten upon the cut of their coat, just as a "Noah's ark" covers many a Mule now-a-days. These outsiders—the irregularly-marked Mules, are virtually excluded from competition at the Palace, the prize list providing really for only two descriptions of birds apart from the dark self-coloured—that is, for Clear birds, or birds so nearly approaching that point as to require some skill to discover the defect; and secondly, for Evenly-marked birds, assuming the word "Variegated" to have the same meaning as in Classes 3 and 4. This being so—and the few entries in the "Clear for choice" classes (only half a dozen in all) support my view—I think that any bird approaching exactness in marking to such a degree as to make it what is understood and recognised as an Evenly-marked bird, is, if found in this class, wrongly entered, and should be disqualified, no matter how slight its markings. Such a bird was 527 (J. Doel), first prize, one which never should, under any circumstances, have come into competition with what is meant by "Clear for choice" birds. If absolutely Clear Mules be so rare that, for reasons financial or otherwise, it be not deemed expedient to give them a separate class, but to include among them those which are almost but not quite spotless, justly giving precedence to the perfect bird, by all means let the line of demarcation be clearly drawn.

In the Buff class there could be no mistake as to first and second, 529 (Ashton) and 530 (Doel), being two gems without a flaw, but 529 much the higher colour of the two. No. 531 (Doel), highly commended, was open to the same objection as 527, being pencilled on the eyes, besides having other marks.

The stars in the Variegated Jonques were 540 (Ashton), first and cup, a rubicund-faced friend, the hero of many fights, with a blaze of colour such as one might expect to see in a bird addicted to cups, and 543, 544 (Doel), second and third, both exquisite specimens. The commended birds also were well worthy their v.h.c., and specially 539, which, though defective in the pencilling of one eye, is my embodiment of an aristocratic Mule. It has a "port and a presence."

Variegated Buffs were good, though not extraordinary, but the first prize, No. 549 (Fairclough & Howe), was a grand, lusty bird, and fairly ranks high among Mealy Mules of known reputation. One or two, however, will have to die before it can succeed to the crown. Mr. Doel's birds here deserve special mention, all being young; 564, marked on eyes, wings, and tail, taking second, with a neat bird of Mr. Baxter's, of Newcastle, third. The Rev. V. Ward showed two which, without much pretension to be considered Variegated Mules, were not to be excelled, if equalled, in condition by any birds in the class.

In Dark Mules there was nothing calling for special comment, and Mr. Spence's Brown Linnet Mule has been described in my notes on Darlington.

In the "Any other variety" class the first prize fell to 602 (W. Yeoman, Leeds), described as a hybrid between the Bullfinch and Canary. That it is Bullfinch and ——, there is apparently no doubt; but in the absence of direct evidence of the fact I should hesitate to name the Canary as the other parent. It is more like Bullfinch and Chaffinch—an opinion which was entertained by a select committee of the *cognoscenti*, who sat upon it in solemn conclave assembled. Mr. Stansfield's Bullfinch-Goldfinch was there, but not in all his glory, for 610, a similar hybrid and much-improved bird, was close on its heels, the third honour very properly going to a Bullfinch-Linnet Mule, of which there were two shown, besides Goldfinch-Linnet, Goldfinch-Greenfinch, and other rarities. The groups I will pass, simply envying Mr. Walter his three-prize "six Norwich," and bestowing an extra word of praise on Mr. Doel's six Goldfinch Mules, which were pictures of condition, as were the second six of Mr. Ashton's.—W. A. Blakston.

UNITED KINGDOM RABBIT SOCIETY.

I think Mr. Millington's suggestion for establishing a "United Kingdom Society" would be the means of putting the question to the test, and the sooner it is commenced the better; but I would suggest the subscription be 2*s.* 6*d.* instead of 1*s.*, and that each member have the privilege of exhibiting one pen annually free of cost.

It is essential for the well-being of such a Society that all petty jealousies should be sunk, and that every variety of the fancy should be fairly represented. For my own part I am a Lop-eared breeder, but I can admire perfection in any class, and am prepared to give it its due reward. While writing on this subject I would remark that it has often occurred to me that a great mistake is made by most societies in awarding to the Lop-eared variety the best prize for length of ear irrespective of every other property; for example, a Rabbit may be produced with tremendously long ears, may be hare-legged, blear-eyed, splay-footed, of very bad colour, ugly in form—in fact may be a ricketty sickly animal, and probably may die within a month or two owing to excessive forcing. Now, to obviate this I would suggest that every Rabbit competing for the first prize should be not less than eighteen months old (about half the age of a healthy Rabbit), and that it should be well upon its legs, of good colour, and have a clear eye. Should this principle be adopted I am sure we should have a better supply of perfect Lops.

Should Mr. Millington prosecute his scheme I shall be glad to co-operate with him.—T. I. Inman, *Hackney*.

A RABBIT FANCIER'S TROUBLES.

I entered four Lop-eared Rabbits and an Angora at the last Portsmouth Show. I was up betimes on Monday morning seeing my pets made comfortable, and got them off as soon as possible to the railway station, paid 15*s*., and sent them off per passenger train. Judge of my feelings, on receiving a catalogue, at finding that my Rabbits were never mentioned, and that my friend in the fancy at Doncaster had taken the cups. Next morning a polite note from the Secretary very solemnly told me that my Rabbits were "too late, or else they would have done something." What important words these, and how soothing! but the greatest surprise of all was the addition that he received them on Tuesday evening. I may add that I received them back about six o'clock on Saturday evening, very nearly lost with cold and hunger. Where has the Society for the Prevention of Cruelty to Animals its head quarters, as this seems a case for it? Now, a good deal of this trouble would be avoided by such a club as Mr. Millington mentioned in a recent number. Are Rabbit fanciers to pack and send Rabbits off on Sunday? this will not do, at any rate not for me—I love that day too well. Thus have I spent 30*s*. in railway fare, and 12*s*. 6*d*. entrance, all to no purpose, and simply because the Portsmouth Show opened on Tuesday instead of on Wednesday, as would have been pointed out by the United Kingdom Rabbit Club; and the other point this Club would rectify would be to enter the all-meaning words "too late" opposite those names which required it, and not lead the public to believe that our Doncaster friend with his two Rabbits had beat all comers, and especially my Rabbits, which beat his at Leeds.—G. H. Hirst.

VENTILATION OF HIVES DURING WINTER.

The "Lanarkshire Bee-keeper" states that he has found the plan of lowering the temperature of his hives by means of ventilation, prove very successful in preserving the lives of his bees during the prevalence of snow in spring. May I ask him to favour the readers of "our Journal" with a particular description of the process whereby this desirable result has been accomplished? What kind of ventilator does he employ? and when is the best time to apply it? Ventilation has been greatly recommended by some high authorities, but a would-be instructor in a book recently published, if I remember rightly, pronounces the whole thing "a mistake." That it can only be so when ill-timed, or the process is faulty, is the opinion of most apiarians who have given it a fair trial. Messrs. Payne and Taylor paid great attention to the subject, and both concur in testifying that it is a valuable expedient for carrying off vapours in wooden boxes, which are liable, by becoming condensed, to render the combs mouldy and offensive. I have had too little experience of the use of ventilators to warrant my saying much respecting their merits, but I saw an attempt made a few years ago to give practical expression to the idea thrown out by the "Lanarkshire Bee-keeper."

In February, when the snow was on the ground, the bees of a common straw hive suddenly rushed out in great numbers to the open air. The loss of life, through their falling into the snow, was fearful, and to prevent further destruction of his property, the proprietor had recourse to the following plan. Procuring a thick piece of wood he cut a row of doorways in it, of a size just sufficient to prevent the egress of bees, and then fitted it into the entrance. The plug at the top of the hive, which might be 1 inch in diameter, was next withdrawn, and a milk pan was inverted over the hole, both skep and pan being covered with a thick coat of straw. This device was very successful in keeping the bees at home, but the cure was as bad as the disease, for the hive was ventilated to death. In the midst of plenty every bee perished; the community were unable to bear up against the increased cold caused by a draught of air, which could only have been slight, passing up through the hive; and when the plug a few days afterwards was withdrawn, the bee-master had the mortification of seeing nothing but lifeless clusters on the floorboard and between the divisions of the combs. Is it, then, safe or expedient to have recourse to ventilation at a time when, after a lengthened confinement, the loaded bees take steps for obtaining relief?—R. S.

OUR LETTER BOX.

Books (*W. S.*).—There is no book on Cochin-Chinas only. "The Poultry-Book for the Many" contains relative directions for rearing them, notes on form, &c. It can be had from our office by post, if you enclose seven postage stamps with your address. (*J. Hunt*)—"House Dogs and Sporting Dogs." Van Voorst, London. Only one edition. It is a small volume.

Crêve-Cœurs (*Henwife*).—The white deaf-ear is not an important point in any way with a Crêve-Cœur cock. It is, as in the case of a Dorking cock, immaterial. Many Crêve-Cœurs have them remarkably developed at this time and during the spring. It is not desirable, and if we had to choose between two birds equal in every point save the difference of the ear-lobe, we should take the bird without one. We nevertheless repeat, it is not a disqualification. You may safely set the eggs.

Houdans (*A. C.*).—The chickens hatched will take after both cocks; some will have the small size, others the faulty plumage, both modified by the quality of the hens. What do you mean by faulty plumage? Do you mean coloured feathers? Straw-coloured are a simple disadvantage; few cocks are without them. Red feathers disqualify. The birds bred from a Light Brahma hen running with a Dark cock will be of mixed plumage, probably white breasts, great predominance of white in the hackle, and black and white backs and saddles. They lose no valuable properties, but being cross-bred they are fit only for layers and ordinary farmyard fowls. We do not think they need be separated for more than a fortnight, or at most three weeks, for the purpose of changing the cock, before the eggs may be set as the produce of the new bird. What do you mean by the sandy tinge? A Dark Brahma cock has only a "suspicion" of deep brown on the wing, and he is better without that. The Silver-Grey Dorkings are not better in Scotland than in England, but the majority of Scotch amateurs will not look on any feather as pure. We do not advise you to apply to any agent to buy or claim birds at a show. If you can go yourself, do so. If not, try to find a competent friend. If still unable, write to the Secretary of the Birmingham Show to claim for you prize birds of the breeds you require, if they are to be had at a price you must name. We name Birmingham because all the classes there are good. In smaller shows, although they may be good as a whole, yet some classes are mostly weak, and they might be those in which you were most interested.

Fowls in Rooms—Road Grit (*Nottingham*).—We much fear you will do little good keeping fowls in rooms. The flooring will not suit. You can obviate that by covering it some inches—3 or 4—with road grit. The latter is made up of the scrapings of a road and the trimmings of the side paths when the gutters are cleaned and the road made straight. This has the property of being always dry, and there are also among it many roots of grass, of which the fowls are fond. You will have to supply the fowls with sods of growing herbage daily, and with bricklayers' rubbish. They would want no roosting place, as they are under cover, and will choose for themselves a sheltered sleeping place. If you will take this trouble you may keep them and set eggs. You could not rear chickens in such a place. You could keep Brahmas, Cochins, Spanish, or Crêve-Cœurs.

Hen's Legs Become Coarse (*A. W. J.*).—Your hen has the recently imported malady which has been called the "poultry elephantiasis." It is a tiresome disorder, and can only be treated by frequent lubrications with compound sulphur ointment.

Drake Chasing Hens (*O. A. G.*).—We do not see why you should remove the drake from the Ducks. The eggs will probably be good throughout the laying, but there is nothing to gain by removing the drake.

Dorking Chickens Dying (*O. C.*).—If the chickens die of weakness there is something wrong in the feeding. When hatched early—in February or before—they should have strong beer to drink instead of water. Young chickens should have chopped egg, bread soaked in beer, bread and milk, coarse cooked meat chopped fine, curd, and dough made of ground oats if to be had; if not, of oatmeal. It is possible your chickens die from being infested with vermin. In this case your remedy will be to put heaps of dust and road sand close to the rip in which the hen is confined. Water strongly camphorated is an excellent thing for all poultry, and where that is used there is seldom any serious disease. Of course you keep the hens shut up in their rips till the chickens are six weeks old; if you do not, then do so, and feed as we have described. You ought then to rear nearly all your chickens.

Food for Ducks (*J. C. W.*).—We know no better food. You need not be uneasy at having no eggs; many people have none, especially where the Ducks are two or three years old. There is not a week lost, and you need not be uneasy though you have none for the next three weeks.

Roup (*Henricus*).—Roup is not so contagious as it used to be years ago. It is, nevertheless, a great plague and nuisance in a yard. Your remedies have not failed, as probably without them the birds would have died. Give them strongly camphorated water to drink. The offer of nine Silver-spangled Hamburghs for 50*s*. was tempting, as good birds are worth more. It does not, however, palliate the offence of sending diseased birds. These cheap lots generally have some fault, defect, or disease that makes their owners anxious to be rid of them.

Tumour in Pullet (*E. E. F.*).—It may be the hen has a tumour, and if so it will be well to kill her at once. Such are common among old birds. But the same appearance would proceed from an egg-bound hen or pullet, and it frequently does so at this time of year. The cure is to pass a wing feather saturated with oil down the egg-passage till it reaches the egg, which will be laid at once after this assistance. Your fowls are well managed, and therefore profitable. Your Ducks and hens give an average of ninety-four eggs from each bird. We can only guess the value of your stock because we have not seen it, but we should not think 5*s*. each more than their value. It is probably less than many of them are worth.

Fattening Dorkings (*M. W.*)—Your poultry-woman does not understand her business. Fowls will keep in good fleshy condition if well fed while running about, but they will not fatten. They should be put in close confinement in a warm, semi-dark, and quiet place, such as is afforded by the outhouses of gentlemen's premises. They may be peckers, and fed on a board three times a-day, or put in a coop and crammed. In both cases they must have no liberty, and must be fed at daybreak. We advise you to buy Beily's book on fowls, which gives full instructions, and devotes a long chapter to the subject. The food should be oatmeal and milk; there should be no mixture of pollard with it. Hen Turkeys may be kept till they are four years old, but careful breeders generally change the cock every other year. The Cambridge and Norfolk are both very good; the former are rather the larger. The same remark applies to Geese. They may be kept five or six years, but the gander should be changed. Seven Geese are too many for a gander, four are sufficient.

Hen Nesting but not Laying (*C. J.*).—Your hen, if not diseased, either does or will lay. Very many have not yet begun, and many are

condemned now like yours; but she will yet prove she has lost none of her valuable properties.

CHICKENS DEAD IN THE SHELL (*H. C.*).—You did not lose your chickens because the inner membrane of the egg was so thick, but because you did not moisten the eggs. They should be wetted every day for ten days before they are hatched, otherwise the chickens cannot make their way out. When the hen is off sprinkle water over each till it is wet. The round shape of the egg indicates that the shell is not so strong as it should be. If the run is deficient in lime, throw down some bricklayers' rubbish. They will hatch, but as such eggs are thin-shelled we should prefer to set perfectly formed ones.

BRAN AS POULTRY FOOD (*Nemo*).—We are quite aware that there is nourishment in bran, but as a poultry food it is worthless. The far larger portion passes through a fowl undigested. It helps to fill the bird's crop, but sawdust would do that at less expense. Such a mixture as rice and bran is about the least nutritive diet fowls could be put upon.

GROUND OATS (*Lemon Buff*).—The sample you send is more like bruised than ground oats. They would mix as coarse as sawdust, whereas in properly ground oats the skin, which in this sample is whole, is ground so fine that the whole assumes the appearance of coarse flour, and mixes almost as well. Experiments are being tried to grind them near London. As soon as it is satisfactorily done we will communicate with our readers. The sample from "*J. S. S. M.*" is good.

COST OF A FOWL'S KEEP.—Is there not some mistake in "E's." statement, that he keeps his Brahma fowls for 1½*d.* a-week each?—G. C.

BLUE JACOBINS.—Mr. A. Valabere, Rose Villa, Merton Road, Tooting, S.W., says that he can give "K. P." useful information, having kept the variety many years.

CARRIER PIGEONS (*Carrier*).—You will have found the needed information in our "Pigeon Book." If you require further information on any point please to specify it.

MATCHING DRAGOONS (*W. Torr*).—We are no friends to crossing colours when it can possibly be avoided, too much mischief has been done already in this way among fancy Pigeons; so we advise you to mate blue with blue, and the white with the silver, if you must. The fruits of a cross chiefly depend upon there having been crossed blood in the birds before. Thus we have known two red Pouters produce blue young ones because blue blood was in the parents' veins. If no crossed blood, the result may be clear young of either colour, but more probably of patched colour. Bathe the damaged eye wattle with a mild solution of alum in water.

CANARY'S SEIN IRRITATED (*Norwood*).—If the bird is suffering from the attacks of the red mites, dust it well with flowers of sulphur, blowing this well into the feathers. Discontinue all stimulating diet, such as hemp; feed only on Canary seed, and give a plentiful supply of green food.

BULLFINCH AND CANARY MULE (*Bullfinch*).—I do not think the feat has ever been accomplished—that is, the production of a Bullfinch-Canary Mule. The hen Bullfinch will enter into the most friendly relations with the Canary, and make the most amorous overtures to him. I had one which would flirt for ever, and now have two which no doubt will be guilty of the same unmaidenly conduct. But my Canaries were very Josephs of virtue, and resisted all the blandishments of the syren. If "BULLFINCH" will send me his address, I will tell him more about it.—W. A. BLAKSTON.

PRICE OF BEES (*Abeille*).—The value of bees varies very much in different localities. A strong, well-provided stock may in the spring be considered worth 20*s.* to 30*s.*, and an early swarm of pure Ligurians about two guineas.

FRUSTRATING HIVE-BREAKERS (*A Subscriber*).—The plan of alternately closing the entrances of your plundered and plundering hives may ultimately succeed in saving your assailed bees from destruction if continued until out-door collections begin to be made; but when once a hive has found out a weak neighbour and effected an entrance, it is liable to resume its predatory habits whenever a favourable opportunity occurs. Where practicable, it is well to remove the freebooters or their victims to the distance of a mile for a few weeks. If you wish to try the effect of carbolic acid in frightening away corsairs, you have only to dip a feather in the liquid and wet the entrance of your weak stock all round, letting fall at the same time a drop or two of the acid on the landing. Should robbers persist in their attacks, keep up the odour by repeating the process as opportunity offers during the course of the day. It is desirable, also, to have the entrance narrowed to admit the passage of only two or three bees at a time.

METEOROLOGICAL OBSERVATIONS,

CAMDEN, SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude 111 feet.

DATE.	9 A.M.					IN THE DAY.				
		Hygrometer.				Shade Temperature.		Radiation Temperature.		
1871. March.	Barometer at 32° and Sea level.	Dry.	Wet.	Direction of Wind.	Temp. of Soil at 1 ft.	Max.	Min.	In Sun.	On Grass	Rain.
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
We. 1	30.474	37.4	33.2	S.E.	41.8	44.0	34.2	75.0	30.8	—
Th. 2	30.404	38.4	37.0	S.E.	40.0	54.8	29.8	77.2	27.7	—
Fri. 3	30.289	40.0	38.8	E.	39.6	62.2	30.8	87.3	28.2	—
Sat. 4	30.059	41.0	40.4	E.	39.0	62.8	33.8	102.0	29.0	—
Sun. 5	30.038	48.0	46.0	S.E.	40.3	56.5	38.9	96.0	35.0	—
Mo. 6	29.666	52.0	47.3	S.E.	41.5	54.6	47.2	69.0	44.6	0.080
Tu. 7	29.735	47.4	45.4	S.	42.2	52.2	45.1	87.0	41.5	0.067
Means	30.095	43.5	41.2	..	40.6	55.8	37.1	84.8	33.8	0.147

REMARKS.

1st.—A fine day but colder.
2nd.—White frost in the morning, slight haze at night, but a fine day.
3rd.—White frost in morning, but sunshine in the middle of the day. Lunar halo at night.
4th.—White frost in morning, fine warm afternoon.
5th.—Fine afternoon, very bright moonlight at night.
6th.—Fine morning, cloudy afternoon, occasional showers in the evening, but very fine at night.
7th.—Rather dull in the morning, but fine in afternoon, high wind at night, with sudden dip of the barometer.

A fine week, temperature above the average, and daily range very considerable—*e.g.*, 25.0° on 2nd, 31.4° on 3rd, and 29.0 on 4th.—G. J. SYMONS.

METEOROLOGICAL REPORT FOR FIRST TEN DAYS OF JANUARY.

THE following report is given with the view of rendering complete from the beginning the series of Meteorological Reports which commenced at page 60.

DATE.	9 A.M.					IN THE DAY.				
		Hygrometer.				Shade Temperature.		Radiation Temperature.		
1871. Jan.	Barometer at 32° and Sea Level.	Dry.	Wet.	Direction of Wind.	Temp of Soil at 1 ft.	Max.	Min.	In sun.	On grass	Rain.
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
We. 1	30.140	23.0	22.8	S.	33.0	28.5	21.0	43.8	21.0	—
Th. 2	29.916	26.8	26.0	S.E.	33.0	27.6	22.4	26.5	21.9	—
Fri. 3	30.017	31.0	30.7	S.	33.0	33.8	25.0	33.9	25.0	—
Sat. 4	30.172	30.8	30.0	S.E.	33.0	31.8	30.0	41.6	28.8	—
Sun. 5	29.918	32.3	31.8	S.W.	33.0	39.8	22.7	50.2	20.8	0.072
Mo. 6	30.210	33.2	32.5	S.W.	33.5	44.4	30.3	62.8	26.3	0.053
Tu. 7	29.763	43.0	42.0	S.W.	34.0	45.2	31.8	55.6	26.7	0.035
We. 8	29.564	33.8	32.9	N.W.	33.0	39.8	31.9	61.5	28.4	—
Th. 9	29.373	34.8	34.0	S.	32.5	35.8	29.2	43.5	27.1	0.035
Fri. 10	29.728	30.5	30.0	N.W.	32.5	36.2	26.3	43.7	24.8	—
Means	29.881	31.9	31.3		33.0	36.3	27.4	46.6	25.1	0.195

REMARKS.

1st.—Overcast, except in afternoon; calm day.
2nd.—Dull unbroken cloud throughout; very cold.
3rd.—Overcast; maximum temperature at 10 P.M.
4th.—Dull.
5th.—Overcast in morning and very cold, fine afterwards, and warmer at night.
6th.—Fine morning; rain in afternoon; cloudy at night.
7th.—Fine and warm in morning; showery afterwards.
8th.—Moderately fine, with occasional slight snow showers.
9th.—Overcast, with snow and sleet.
10th.—Snow in early morning; cloudy throughout the day.—G. J. SYMONS.

COVENT GARDEN MARKET.—MARCH 8.

WE have had a fair attendance of buyers on the market days, and things generally have put on a better appearance. The trade with the west of England and the Channel Islands has much improved, and the report for spring produce is good. Good dessert Pears are now comparatively scarce, and consist only of Easter Beurré and Beurré de Rance. Potatoes remain at last week's quotations. Ordinary Apples are still a very heavy trade.

FRUIT.

	s.	d.	s.	d		s.	d.	s.	d
Apples ½ sieve	1	6	to 3	0	Mulberries lb.	0	0	to 0	0
Apricots doz.	0	0	0	0	Nectarines doz.	0	0	0	0
Cherries lb.	0	0	0	0	Oranges ₱ 100	6	0	10	0
Chestnuts bushel	10	0	18	0	Peaches doz.	0	0	0	0
Currants ½ sieve	0	0	0	0	Pears, kitchen doz.	1	0	3	0
Black do.	0	0	0	0	dessert doz.	3	0	8	0
Figs doz.	0	0	0	0	Pine Apples lb.	6	0	10	0
Filberts lb.	0	0	2	0	Plums ½ sieve	0	0	0	0
Cobs lb.	2	0	2	6	Quinces doz.	0	0	0	0
Gooseberries quart	0	0	0	0	Raspberries lb.	0	0	0	0
Grapes, Hothouse lb.	6	0	12	0	Strawberries lb.	0	0	0	0
Lemons ₱ 100	6	0	10	0	Walnuts bushel	10	0	16	0
Melons each	1	0	4	0	do ₱ 100	1	0	2	0

VEGETABLES.

	s.	d.	s.	d		s.	d.	s.	d
Artichokes doz.	0	0	to 0	0	Leeks bunch	0	4	to 0	0
Asparagus ₱ 100	7	0	10	0	Lettuce doz.	1	0	2	0
Beans, Kidney ₱ 100	2	0	3	0	Mushrooms pottle	1	0	2	6
Broad bushel	0	0	0	0	Mustard & Cress punnet	0	2	0	0
Beet, Red doz.	2	0	3	0	Onions bushel	4	0	7	0
Broccoli bundle	0	9	1	6	pickling quart	0	4	0	0
Brussels Sprouts ½ sieve	3	0	4	0	Parsley sieve	3	0	6	0
Cabbage doz.	1	0	2	0	Parsnips doz.	0	9	1	0
Capsicums ₱ 100	0	0	0	0	Peas quart	0	0	0	0
Carrots bunch	0	4	0	8	Potatoes bushel	2	0	4	0
Cauliflower doz.	2	0	6	0	Kidney do.	3	0	4	0
Celery bundle	1	6	2	0	Radishes doz. bunches	0	6	1	0
Coleworts doz. bunches	3	0	6	0	Rhubarb bundle	0	9	1	6
Cucumbers each	1	6	3	0	Savoys doz.	1	6	2	0
pickling doz.	0	0	0	0	Sea-kale basket	2	0	3	0
Endive doz.	2	0	0	0	Shallots lb.	0	3	0	0
Fennel bunch		3	0	0	Spinach bushel	3	0	5	0
Garlic lb.	0	3	0	0	Tomatoes doz.	0	0	0	6
Herbs bunch	0	3	0	0	Turnips bunch	0	6	0	0
Horseradish bundle	3	0	5	0	Vegetable Marrows doz.	0	0	0	0

POULTRY MARKET.—MARCH 8.

	s.	d.	s.	d		s.	d.	s.	d.
Large Fowls	3	6	to 4	0	Pigeons	1	0	to 1	3
Smaller ditto	3	0	3	6	Rabbits	1	4	1	5
Chickens	2	3	2	9	Wild ditto	0	9	0	10
Ducks	5	0	5	6	Hares	0	0	0	0
Geese	7	6	8	0	Guinea Fowl	3	0	3	6
Pheasants	1	9	2	3	Grouse	0	0	0	0

WEEKLY CALENDAR.

Day of Month	Day of Week.	MARCH 16—22, 1871.	Average Temperature near London. Day.	Night.	Mean.	Rain in 43 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
						Days.	m. h.	m. h.	m. h.	m. h.	Days.	m. s.	
16	Th	Meeting of Royal and Linnean Societies.	51.0	34.0	42.5	14	13 af 6	4 af 6	22 af 4	after.	25	8 51	75
17	F		52.0	32.5	42.3	13	11 6	6 6	5 5	36 1	26	8 34	76
18	S		49.9	33.0	41.5	13	9 6	8 6	38 5	51 2	27	8 16	77
19	Sun	4 Sunday in Lent.	50.9	33.0	41.9	15	7 6	10 6	3 6	5 4	28	7 58	78
20	M	Meeting of Entomological Society, 7 P.M.	51.1	33.8	42.5	17	5 6	11 6	25 6	19 5	29	7 40	79
21	Tu	Meeting of Zoological Society, 9 P.M.	50.7	32.5	41.6	19	3 6	12 6	43 6	31 6	●	7 22	80
22	W	Royal Botanic Society's Spring Show, 2 P.M.	50.4	34.3	42.3	20	1 6	14 6	0 7	41 7	1	7 4	81

From observations taken near London during forty-three years, the average day temperature of the week is 52.3°, and its night temperature 33.3°. The greatest heat was 58°, on the 21st, 1846 and 1859; and the lowest cold 2°, on the 17th, 1855. The greatest fall of rain was 0.51 inch.

PRIZES FOR HYBRID AND CROSS-BRED PLANTS.

I WISH to call the attention of our horticultural friends, and especially those interested in the growth of a really scientific feeling in the Royal Horticultural Society, to a set of premiums offered for hybrid plants under a certain general condition or proviso—namely, that the plants exhibited shall be shown in a manner calculated to illustrate the phenomena of hybridism and cross-breeding.

As it was obviously impossible to collect and produce on one given day anything approaching to a really high-class exhibition, it was thought that a special and continuous series of exhibitions through a whole season would give the necessary facilities.

In any gardening establishment, large or small, professional or private, the sowing, rearing, and flowering of seedlings, whether cross-bred or not, is a distinct pursuit, independent, as it were, of times and seasons. The subjects come into flower at all sorts of odd times, and have to be hunted for in odd corners. Some showy and valuable, some uncomely though interesting—fruits, flowers, weeds; branch and spray from the forest or shrubbery—these cannot be shown as you would show Geraniums or Azaleas, where the proper period of perfection for exhibition can be timed to a minute.

A larger number of premiums than usual is also resorted to in order to take in the productions of those humble aspirants who, having more brains than means and appliances, or who have taken up one special line of work alone, may yet bring forward small but important collections.

The practice of crossing plants for amusement, curiosity, or commercial purposes, has now become so common that no gardener with any pretension to skill in his profession would own to ignorance of it as part of his craft; but the number of scientific observers in this direction has been, and the conclusions arrived at, fewer; even over these hangs a shadow of doubt and uncertainty. We want facts—facts accompanied by real evidence; the hybrid plant, with its existence as such rendered evident to our sight by the presence of its parents at the same time, is such a fact. There it stands assured to our senses a living syllogism. And so, if possible, we wish to have all subjects shown in company with the two parents thereof.

That may be considered the main point. Of course, it will not always be possible to exhibit all three plants growing in so many pots. In such cases, one or even both parents may be shown as cut specimens. Nay, there are cases imaginable where neither parents nor offspring could be shown growing. Imagine, for instance, a small Oak tree with its two parents, venerable specimens of Quercus Cerris and pedunculata!

I will read presently a short list of imaginary subjects to explain what I mean by the following instructions to judges. Marks will be given in consideration of—

Great botanical interest.

Great horticultural interest.

Great horticultural merit.

New and hitherto unattempted crosses.

Difficult crosses.

Memoranda in writing to accompany objects exhibited will carry much weight, especially if well written, and evincing careful observation.

The above remarks were read by me at the last Wednesday meeting of the Royal Horticultural Society, when I observed that it would be necessary to consult with one or two competent authorities upon certain knotty points before publishing in full the conditions under which we desired the exhibition to be carried on.

Our original intention was that the exhibition should be a free and unrestricted one, admitting alike old and new plants, whether raised by the exhibitor or not, preferring, however, those raised by himself. The friends, however, whom I consulted—namely, our two Superintendents and several men of high standing in the profession, urged the exclusion of plants shown previously, and of such as were not raised by the exhibitor. These principles, if strictly carried out, would, I think, narrow prejudicially a wide field, and exclude a multitude of interesting objects. The following modifying rule will, I believe, meet the case, which is certainly one of some difficulty:—No plant to be exhibited without the consent of the raiser. This will obviate any clashing of interests, as in the case of one man exhibiting and profiting by the valuable productions of another.

It must be remembered that the premium is for a purely scientific object, less regard being had, upon the whole, to the intrinsic value of the objects than to their bearing upon a certain definite subject—that of hybridism and cross-breeding. It is to be hoped that it will be met in a like spirit, and will be looked upon and forwarded as an attempt in aid of the true interests of both the science and art of horticulture.

I conclude by expressing a hope that this may be the forerunner of a series of premiums to be held in future years for special scientific objects, and that the Fellows in general, both private and professional, will come to the aid of their Council in raising their Society to the position it once held, and might hold again, as the fountain of horticultural science.

The following imaginary, or rather suggestive, list was drawn up with the view of explaining some of the foregoing remarks as to the nature of the objects to be exhibited.

OBJECTS OF BOTANICAL INTEREST.

Ixia, Sparaxis, and Tritonia crossed with each other.
Primrose with Cowslip.
Elisena with Ismene.
Chelone with Pentstemon.
Meconopsis with Papaver.
Tigridia with Phalocallis.
Corbularia with Narcissus.
Convolvulus, Calystegia, Ipomœa, and Pharbitis with each other.

All these crosses if effected would assist botanical science by the determination of affinities.

OBJECTS OF FLORICULTURAL INTEREST.

Tulipa sylvestris, oculus-solis, snaveolens (Van Thol), and the early Tulips, crossed with each other, and with the best late-flowering show sorts.

Primrose and Polyanthus inter-crossed to produce new forms capable of after-improvement by the florist.

Anemone coronaria with sylvestris, apennina, and various others.

The garden Hyacinth systematically cross-bred,
The Tea-scented Rose crossed with the Yellow Briar race, also its yellow forms with Rosa alba, to produce fragrant white and yellow Perpetuals.
Pelargonium scntatum with Ciconium, to verify or disprove the capability of union between the Scarlet Geranium and the Ivy-leaf.
Carnation and Picotee.
Tom Thumb, or other plain-leaved Geranium, crossed with Mrs. Pollock, Golden Chain, and Alma. Baron Hugel, or other dark-zoned sort, with the same three descriptions of variegation.
Aquilegia glaudulosa with other Columbines.
British wild flowers, as Veronica, Ranunculus, Lonicera, Digitalis, Gentiana, crossed with allied exotic species.
Common Sloe with Green Gage.
Cherry Plum with the Green Gage.
Bramble with the Raspberry.
Crosses amongst the Brassicas, Onions, Carrots, and Radishes.
Black Currant and Scarlet Ribes.

DIFFICULT AND HITHERTO UNATTEMPTED HYBRID UNIONS.

Common Maize by variegated Japanese.
Common Pine Apple by Variegated Pine Apple.
Composite plants, as Aster, Dahlia, and Chrysanthemum.
Native Iris, fœtida and Pseudacorus, with the handsome garden sorts.
Salvia patens, with fulgens and splendens.
Mimulus cardinalis and the Musk plant.

Objects of great beauty and value will be readily produced from amongst the crowd of gorgeous new plants at our large establishments. Fruit and vegetable crosses are particularly desirable.

The above list must be, of course, considered as suggestive only and explanatory, showing what may, and probably can, be done in future seasons. To produce the crosses enumerated would be the work of from one to several years, but who knows but one or other may even turn up this very season?—R. Trevor Clarke.

SELECTIONS OF VINES AND EDUCATING THE ROOTS.

I have read Mr. Abbey's article at page 65, and I think Chaouch, or the Turkish Sweetwater, is quite worthy of being grown amongst the rest; it is the favourite Grape at Constantinople, a good grower, with handsome foliage, and is sure to attract the eye upon entering a vinery. The bunches are large and showy, and the berries large, oval, bright amber-coloured. As regards flavour, grown in a house with Lady Downe's, Burchardt's Prince [Aramon], Black Tokay, or Alicante, West's St. Peter's, Foster's White Seedling, and Trebbiano, this Grape was preferred by my visitors. Such has been my experience with it when grafted upon an American stock. It is also a good pot Vine, and hangs well.

In the list of Frontignans, the Early Golden, or Salamon's Frontignan, should not be omitted; it ripens as early as the Smyrna Frontignan, or, to give this its Levant name, Isaker Daisiko, and is first-rate in flavour and appearance. The ladies say, "What lovely Grapes!" Next comes the Primavis Frontignan, which is an offspring of Chasselas Musqué, known to some as Josling's St. Alban's, one of the finest of all Grapes when in perfection. The Primavis has large berries and bunches of the same high exquisite flavour as its parent, and the Vine is vigorous and fruitful. These two do not require so much heat as the Trovéren, and the three varieties named are the cream of the Frontignans, a class of Grapes having no equal when grafted and planted in inside borders, or grown in pots plunged, suitable for forcing or midseason supply. All the Frontignans named are croquant, or crackling, a quality much admired by the French.

Lady Downe's, like its twin sister, Foster's White Seedling, forces well. Although generally spoken of as a late Grape, so highly does it stand with me, that it is used for early and late work. As to Barbarossa, or Gros Guillaume, I urge the planting of grafted Vines only, these being worked on the Frankenthal, or better on the wild American stock, planting in inside borders not filled with manure, and in a heat a little above that of a Muscat house. Then this Grape will give every satisfaction, and be very fine both in bunch and berry. Allowed to hang till spring, it is one of the very best black Grapes grown; no Grape keeps longer than this, and it never shanks. Its noble bunches, weighing 6 or 7 lbs. each, might easily be mistaken for well-grown Hamburghs. Gros Colman is not mentioned. It is a noble Grape in bunch and berry, sure to attract attention at the dessert. Being a late Grape it should be left hanging as long as possible; in fact, do not cut it until the berries show symptoms of shrivelling.

As to educating the roots of the Vine, as Mr. Thomson so ably points out at page 61, all reflective readers will agree that it is of great importance. In planting Vines which I have purchased from time to time, I have had to contend with the difficulty of disentangling two or three leading roots, which, when uncoiled from the pot, would be 3 or more feet in length. To counteract this to some extent, I have shortened such long roots and cut off the tips of others with the view of forming a compact circle, the stem of the Vine being the centre, knowing that the new roots are produced at the ends of the old roots in the greatest quantity. In striking Vine eyes in 3-inch pots, I have cut off the points of all the quill-like roots when shifting into a pot only one size larger, this stopping of roots and shifting being repeated as fast as the pots became full of roots. By such means I have obtained a densely-packed ball of roots, in the soil for which a small portion of bone dust (borings of knife handles) was used. The shifting is discontinued when the Vines are in a 10 or 12-inch pot.

I stop my Vines when they are 6½ to 7 feet high, including the pot, whether they are intended for fruiting in the pot or planting. I afterwards reduce the height to, say, 5 feet, and thus I obtain fine plump eyes, sure to crop well, and the shortening aids the lower ones very much. Vines grown in soil with a large proportion of manure make stout canes, which please the eye, accompanied with large soft roots; but canes of less size and smaller harder roots are by far the best for all purposes.—R. M. W., *Fir View, near Sheffield.*

VARIEGATED KALE.

If fitness for its purpose constitutes one of the chief beauties of a thing, it is equally correct that a suitable position has much influence in causing us to view it favourably. To variegated Kale this reasoning applies with as much force as to anything; it is only a kind of Winter Greens, and planted in the kitchen garden with others of its class, it is not likely to strike one as possessing any very extraordinary merit beyond the common run of culinary vegetables. But select plants after the true colour of the foliage is apparent, arrange them skilfully in groups placed in such a position that the first view is obtained at some distance from them, and with suitable surroundings they are striking objects, producing an effect of such singular beauty as to render them valuable adjuncts for decorative purposes during a period of the year when bright-coloured hardy plants are scarce.

When the beds of a flower garden are arranged for the winter months with dwarf shrubs, some masses of variegated Kale might be introduced with good effect; but otherwise I would prefer seeing them as I did lately at Buxted Park—not in the flower garden, but in occasional groups away among the shrubs on the lawns, where the bright colours and curious foliage were seen with the best possible effect. Uniform in height and size, the plants had their colours so charmingly diversified as to reward one for the closer inspection which their singular appearance invited. Some of them had splendid rosettes of a bright crimson, others were of a delicate pink, and others had foliage of almost a black tint, rendered still more striking by the crimson frill surrounding it. Interspersed among these were others having white and yellowish white leaves, in some instances mottled and splashed with delicate green.

To those who are unacquainted with these pretty plants it will thus be evident that they possess sufficient variety of colour to produce bright variegated masses, which, while they harmonise with the shrubs, tend materially to relieve their monotonous greenery.—Edward Luckhurst.

RAISING AND PLANTING EARLY PEAS.

Reading an article on this subject in No. 518 of The Journal of Horticulture, by Mr. R. Mackellar, induces me to describe a successful mode that I have adopted here for several seasons for raising our first crop of Peas.

According to the number of rows of Peas required, I select paling rails about three-quarters of an inch thick, between 4 and 5 inches broad, and 12 feet in length. This is almost invariably the width of a border having a southern exposure. Then I take three pieces of the same kind of rails from 6 to 8 inches in length, and have a notch cut out thus—V; in this the other two rails are placed edge-to-edge. Three of the notched pieces are sufficient—viz., one at each end and one in

the middle, to keep the rails in their position; the end section of the troughs thus formed is therefore V-shaped. All that is necessary to make the whole secure, and yet facilitate removal as may be necessary, is a small nail in the end of each of the rests, to which a Willow may be fastened right across the rails and secured to the nail in the rest on the opposite side.

Before sowing, the ends of the troughs are closed with small pieces of turf, and the whole length is half filled with good loam. The Peas are sown as thickly as they would be in the open border; more soil is added and slightly pressed until it is level with the edges of the troughs, when these are removed to a vinery newly started, where they remain until the Peas are a couple of inches above ground. Then they are removed to a late vinery to harden off for a few days, after which, when a fine day occurs, the Peas are planted in their permanent quarters in the border.

This is done as follows:—A trench is cut the length of the troughs, and the latter placed close to its edge. The back of a knife is then run close along the inside of the rails to detach any roots which may have adhered to the wood; the Willows are cut, the rests removed, the Peas slip in an unbroken line into the trench prepared for them, and a little soil is drawn up to them. They are at once staked with a slight screen of branches to protect them from frosty nights and cutting cold winds, they receive a watering or two if the weather is dry, and by this plan earlier Peas are obtained than by sowing in autumn, and that without risk or disappointment.—Hugh Rose, *The Gardens, Grangemuir, Fife.*

PROTECTING GARDEN CROPS FROM RAVAGERS.

As seed time has pretty generally commenced, I offer to your readers a few suggestions which, if carried out, will prevent many of those disappointments we are subject to in cultivating the various products of the soil. Many are the enemies of the gardener—unsuitable soil, mice, birds, insects, &c., but these difficulties may all be overcome by experiments made by ourselves and by the experience of others. For the last forty years of my life I have carried on experiments in horticulture, some of which have proved very successful, and which, for the benefit of the readers of our Journal, I ask you to insert.

The subject of red-leading seeds has been very fairly made known, but I have been amused by the very delicate manner in which the use of red lead is sometimes recommended. I have employed it for horticultural purposes for upwards of sixteen years, and I find neither danger nor inconvenience in that use. As red lead is insoluble in water, the rootlets of plants cannot take it up. The advantages "R. F." speaks of are not over-, but under-rated. Much time and annoyance might be saved by extending the use of red lead to seed corn, especially where soils abound in wireworms. The expense is very trifling.

Then there is the woodlouse infesting the crevices in heated and other houses, causing great devastation. Carbolic acid in liquid, mixed with a portion of soil and spread round the inside walls, will cause woodlice to quickly disappear. Young Turnip plants in their early stage are often devoured by the saw-fly, whereas if a quantity of flowers of sulphur were put into a flour dredger and thus distributed over the plants as soon as they appeared, the odour of the sulphur being offensive to the insect, the latter leaves the plants for other prey. The same application to the Onion crop, when the plants have produced two leaves, will save the crop from the "grub."

I have always found a single thread of black worsted preveuts sparrows from taking the buds of Currants and Gooseberries, also the young Pea plants.—The Original Red Lead, *Knutsford.*

GOLDEN CHAMPION GRAPE.

I wish some of your correspondents would etate their candid opinion as to the merits of this highly-recommended Grape. Perhaps Mr. Thomson, who is, I believe, its father, may tell us not only its good qualities, but exactly how to grow it successfully.

My own experience is this. Two years ago I purchased a very nice well-ripened £2 2s. plant of Messrs. Osborn, and a better-rooted or better-looking young Vine I never wish to buy. I planted it carefully along with Golden Hamburgh, Muscat of Alexandria, Bowood Muscat, Muscat Escholata, and Black Hamburgh in an inside border made of the best materials. It broke slowly and badly, and was a long time in making a fair-sized shoot, but eventually I managed to get a tolerably good cane. I cut this back, and have treated it from the commencement much as I did the others, only giving it rather more water, as Mr. Thomson some time since in your Journal said that it needed more water than many other varieties. The next year it broke badly again, showing no bunches, and carrying yellowish unhealthy-looking foliage. Still I again succeeded in obtaining a fair cane, which appeared to be well ripened by the autumn of last year. Now, it has broken again without a bunch showing anywhere. The leading shoot is very strong and gross, so much so that I have stopped it to one leaf, hoping to make the other shoots stronger, but all to no purpose, for, as these appear no trace of a bunch is to be seen. I have several other Vines of the same variety, some in pots and some planted out, and they all go on in the same way. Golden Hamburgh, generally thought to be a weak grower and not overfond of showing bunches, growing next to it, has a promise of plenty of fruit, and all the other Vines in the house are doing very well, showing two or three fine bunches at every eye.

Now, as mine is not an isolated case of failure, every friend I have spoken to, without exception, having the same tale to tell, I think I am justified in saying that under ordinary treatment the Golden Champion is a very shy bearer. One of our largest Grape-growers told me that when it first came out he planted a house with it, and was so disgusted at its growth that he grubbed every Vine up. After one more year a good many more will do the same, unless some plain method of treatment can be laid down which will insure success.—Henry Nicholls, *Hawkhurst Lodge, Horsham.*

[We sent this communication to a very good authority, and this is his reply:—"My experience of this Vine is, I regret to say, not so satisfactory as I could wish. Planted out on its own roots it did not show fruit very well last season, but grafted on the White Tokay it bore tolerably well. It grows luxuriantly, but fails to ripen the side shoots well, so that the buds are in no condition to start the following year. Grafted on the Black Hamburgh, as Mr. Thomson has it, it does remarkably well, and is altogether a noble Grape. I would suggest this as the best means of growing it. There is no question about the fine qualities and noble appearance of the Golden Champion when it is grown well, but there is just as little question about its being of a very peculiar constitution, and by no means easy of cultivation."]

"WHO MOST PROMOTED MODERN ENGLISH GARDENING?"

The above is a question put to us in the expectation that a very different reply would be elicited than that which we give. Our answer is

The man of whom it is the autograph, though little known by his posterity, was one of the most remark-worthy men of the seventeenth century. William III., the Duke of Marlborough, the seven Bishops, Addison, and many others appear prominent on the historian's pages, for all were prime influencers of public affairs in every department of the State. But in all ages—and especially in their age—men in a lower grade were at work quietly but most effectually ministering to the improvement of the tastes and comforts of the entire community. They were labouring not to change dynasties, to maintain creeds, or to ameliorate the laws, or purify our literature, but they were advancing gradually and rationally on branches all leading to one terminus—the improvement of our domestic arts; among these is gardening, and George London was its chief improver.

There was a general desire for better horticulture; men of high attainments, such as Compton, Bishop of London, Sir William Temple, and Evelyn, wrote and expended liberally to promote the attainment of that better horticulture; yet despite these efforts, Evelyn was justified in remarking that, "Some Monsieurs, new come over, think we are as much obliged to follow their mode of gardening as we do that of their garments, 'till we become in both ridiculous." To oppose this

tendency to adopt French teachers were published the volumes having as authors Rose, London, Wise, Meager, Cook, and Switzer, all practical gardeners. but of them all London went to the front, for he not only told what should be done in English gardening, and provided the stores for doing it, but traversed all England to see that it was done judiciously. We will detail our grounds for this conclusion.

Switzer, in his "History of Gardening" in Queen Anne's time, observes, "To set down that history in its several particulars in this reign would require a volume, but will be for the most part summed up in the person and character of George London, Esq., Superintendent of the Royal Gardens, and Director-General of most of the Gardens and Plantations of Great Britain." No one need refer to a Biographical Dictionary for further information relative to George London—not one even names him, yet so often have we found him taking a prominent part in the public transactions of the period that we resolved to arrange the fragments we had collected into the best life's notice we could.

Of George London's parentage or birth-place we know nothing, but it may be presumed that he was not from elevated ancestors, since Switzer, who had been his pupil, merely observes, "I am not well enough informed, neither is it material, that I should go back to his birth and education." The latter was certainly limited, and Switzer speaks of "the little opportunity Mr. London had in laying a foundation of learning—this he overcame purely by industry—what he wanted in one he abounded with in the other."

London was an assistant to Mr. John Rose. who was gardener to Charles II. "at the Royal Garden in St. James's Park," and who ought to be remembered for "the encouragement he gave to Mr. London, who made afterwards the greatest figure ever gardener did." Mr. Rose, at the end of four or five years, sent him to France to observe how gardening was there conducted under its great practitioner, M. Quintinye; yet he went to learn what to avoid, as well as what to adopt, as is shown in the editions of Quintinye's works he aided in publishing.

Soon after London's return from France, he was preferred to the head-gardenership of Dr. Compton, Bishop of London, at Fulham Palace, "one of the first that encouraged the importation, raising, and increase of exotics. He had above one thousand species in his stoves and gardens, in which last he had endenisoned many previously thought too tender for this cold climate."

"Probably assisted in his great design" by Dr. Compton, London, with three coadjutors, founded

"That nursery and fund of gard'ning and plants, with which the nation was afterwards stock'd, I mean Brumpton Park, which, from the ingenious Mr. Evelyn, we may place above the greatest works of that kind ever seen or heard of either in books or travels.

"This vast design was begun some years before the revolution, by four of the head gardeners of England, Mr. London, gardener to the aforesaid Bishop of London; Mr. Cook, gardener to the Earl of Essex at Cashiobury; Mr. Lucre, garden to Queen Dowager at Somerset House; and Mr. Field, gardener to the Earl of Bedford, at the then Bedford House in the Strand, and appear'd to all that heard of it a work worthy of the greatest encouragement.

"One of their first undertakings was at the Right Honourable the Lord Viscount Weymouth's, at Long-Leat in Wiltshire, where these four partners abode every one his month, and in the intervals attended their own business; of which the new nursery before-named was not the least; but some time after Mr. Lucre and Mr. Field dying, and Mr. Cook selling his share, it was divided into two shares only, under Mr. London and Mr. Wise, who were the persons that have since carried it to its highest pitch, which, some years ago, was, by a person of judgment [Bowack], and no great friend to that undertaking, valu'd at between 30 and £40,000 (perhaps as much as all the nurseries of France put together.")

At that time Evelyn described it as "the greatest work of that kind ever seen or heard of." We can trace the changes occurring in the partnership by referring to the parish registers. There we find that in 1681, it was occupied by Lukars & Co.; in 1686, by Cook & Co.; in 1689, by Wise alone; and in 1694, by London & Wise, but they had been in partnership three years before, for we have their first account book, containing their signatures to each quarter's receipts and payments. The first is, "The first quarter, from December ye 28th, 1690, to March ye 29th, 1691."

On the pages of one of the account books of that nursery are entries as far back as 1671, when Mr. London must have been in the Bishop of London's service, as he frequently mentions "my master," occur the names of many gardeners familiar to those acquainted with horticultural literature. Thus there is this entry—"At Guilford, Mr. Meager, 9 dayes worke, and 7 dayes worke at ye Parke, 01—05—10." This was Leonard Meager, author of "The English Gardener," and other works that passed through many editions.

Leonard Meager worked at the Brompton Park Nursery during 1691 and 1692, at 9s. a-week. This was the highest wages they paid. His name appears as employed by Mr. London at Mr. Van Spreeks, and at Brompton seemingly when out of place, in 1693. Many curious bits of information can be gleaned from the same account books. We see in them that per-centeges to gardeners are no modern introduction.

There are many such entries as this —"Gave at the receiving Ld. Bullinge Brooks bill, 00—11—06." Wholesale prices are also recorded (1691). Thus

Pd. Mr. Hurst for 2000 of Yews..	20—03—00
For 250 Matts	05—14—00
For 4000 Horne beames	01—04—04
ffor 20 plumbs	00—18—06
Payd ffor 1 pott of double Virgin's Bower	00—02—06
for 400 of Artichoek plants	00—12—00
ffor 1 pecke Sandwicke peas	00—01—06
payd ffor 33 Orange trees	31—10—00

There were nurseries and market gardens previously, but they were either very small, or their stock was only the commonest of trees, plants, and culinary vegetables. Nor was that the worst of their deficiencies, for the owners were very ignorant of their correct names, and often sold the same variety under different titles. Evelyn gives this example—

"In Pears alone, a gentleman in the country sends to the nurseries for the Liver Blanch, Piguigny de chouille, Rattau blanc, &c., the English St. Gilbert, Cranbourn Pears (and several other names) when all this while, they are no other than the well known Cadillac."

London did much to correct this, and through the Bishop of London and the connections he secured during his own visits to the Continent, he enriched the stock of Brompton Park with a far greater variety of exotics than had previously been purchaseable. It gave birth to other similar nurseries, and his old masters being dead, Leonard Meager recommends purchasers of trees and plants to apply to his 'very loving friend Captain Garrle, dwelling at the great nursery between Spittle-fields and White Chappel, a very eminent and ingenious Nursery-man."

The Brompton Park Nursery continued to exist in its integrity till the year 1852, when the lease expired, and the ground, with some adjoining lands, was sold to the Royal Commissioners of the Exhibition of 1851. Some idea may be formed of the situation when we mention that what is now called Exhibition Road, South Kensington, was the principal central walk of the nursery; and the space now occupied by Prince's Gardens, part of South Kensington Museum, the whole of the Royal Horticultural Society's Garden, and Prince of Wales Road, formed a portion of the Brompton Park Nursery.

Many circumstances combined to enable London to take the leadership in gardening. The Bishop of London, Evelyn, and Sir W. Temple, all appreciated his skill, could aid him in obtaining exotics, and recommended him to wealthy employers. Let one instance of many suffice. Henry Earl of Clarendon, writing to Evelyn in 1686, thanks him "for speaking to Mr. London to go to Swallowfield." This was the Earl's estate near Reading, the gardens of which had been much neglected.

Sir Christopher Wren also employed London relative to the gardens to be formed about mansions of which he was the architect. Evelyn employed them both, as he thus tells—"June 9. 1698. I went to Deptford to see how miserably the Czar (Peter of Russia) had left my house after three months making it his court. I got Sir C. Wren, the King's Surveyor, and Mr. London, his gardener, to go and estimate the repairs, for which they allowed £150 in their report to the Lords of the Treasury." The ravages in the garden may be estimated from the fact that one of the amusements of the Czar was to sit in a wheelbarrow whilst one of his court drove it through the high Box-edgings.

Immediately that William and Mary were established on the throne, Mr. London was appointed Superintendent of all the Royal Gardens with an annual salary of £200; and to this appointment was added that of page of the back-stairs to the Queen, and when Anne succeeded to the throne he was continued in his offices. It is not difficult to discern that other circumstances sustained him in preferment in addition to his great merits as a skilled horticulturist. We have already stated that he was the Bishop of London's head gardener, and the Bishop knowing him to be a sincere Protestant, and discerning, as did Mr. Rose, his promptitude and vigour, selected him as a coadjutor in securing the safety of Princess Anne. Attempts

had been made to induce her to become a Roman Catholic. It was known she doubted the legitimacy of her alleged half-brother. Her husband, Prince George of Denmark, had fled from her father, James II., and the latter was hastening to London breathing vengeance against her favourites the Churchills. The sentinels about her residence were doubled, so at the midnight of a day in the November of 1688 she fled from the palace. She went first to the Bishop, Mr. London's master, and on the following morning left the metropolis for Epping Forest, and went thence to Northampton and on to Nottingham. The Bishop, says Macaulay, wholly laid aside, for the time, his sacerdotal character. Danger and conflict had rekindled in him all the military ardour which he had felt twenty-eight years before, when he rode in the Life Guards. He preceded the Princess's carriage in a buff coat and jackboots, with a sword at his side and pistols in his holsters. It was particularly observed, says Switzer, that Mr. London assisted on that occasion. The same contemporary adds—

"Mr. London and Mr. Wise being joint-partners, and thus as it were, both possess'd of the royal favour, and the purses of the King, Queen, and nobility, left no stone unturn'd to carry on their designs. Soon after the peace of Ryswick [1697], Mr. London took another journey into France with the Right Honourable the Earl of Portland, who was sent by King William Ambassador-extraordinary on that occasion; and then it was that he made those observations on the fruit gardens at Versailles, which are publish'd in the preface to their abridgement.

"After the death of the Queen [Mary], and not many years after her, the King [William], their royal successor Queen Anne committed the care of her gardens in chief to Mr. Wise, Mr. London still pursuing his business in the country. It will perhaps be hardly believed, in time to come, that this one person actually saw and gave directions, once or twice a-year, in most of the noblemens and gentlemens gardens in England. And since it was common for him to ride fifty or sixty miles in a day, he made his northern circuit in five or six weeks, and sometimes less; and his western in as little time. As for the south and east, they were but three or four days work for him; most times twice a-year visiting all the country seats, conversing with gentlemen, and forwarding the business of gard'ning in such a degree as is almost impossible to describe. In the mean time, his collegue manag'd matters nearer home with a dexterity and care equal to his character: And in truth, they have deserv'd so much of the world, that 'tis but common justice to transmit their memory unto ages to come.

"But to speak more particularly of the knowledge Mr. London was suppos'd to be master of in this matter, the little opportunity he had in laying a foundation of learning, was, without doubt, a great obstruction to his progress in vegetative philosophy, which is involv'd in so many hard terms; this, nevertheless, he overcame purely by industry; and what he wanted in one, he abounded with in the other. He was perfectly well skilled in fruit, which seem'd to be his master-piece: As for other parts, as greens, trees, flowers, exoticks, and the like, he certainly had as much knowledge as any one man living: And tho' he might not always come up to the highest pitch of design, yet that might be attributed to the haste he was generally in; and it can be no great blemish to his character, that he was not the greatest person in every thing, when 'tis surprizing to find he could possibly know so much; so great a surprize indeed, that we must hardly ever expect his equal, much less any one that will exceed him. The planting and raising of all sorts of trees, is so much due to his undertaking, that 'twill be hard for any of posterity to lay their hands on a tree, in any of these kingdoms, that have not been a part of their care.

"Mr. London, by his great fatignes in heat and cold, notwithstanding naturally of a healthy, strong constitution, was at last seiz'd with an illness which carry'd him off, after a few months languishing. He has left a laudable example to all that shall have the encouragement to enter, and the courage and strength to perform what he did. He died towards Christmas, in the year 1713."

In every instance that we have had to dwell over the career of a praiseworthy public servant we have wished to penetrate within the front door of his residence, and to learn more of his fireside doings; we have been thus inquisitive about Mr. London, but with small success. We have already noticed that his services had been rewarded by a Court appointment, and we found in the Fulham register that when buried on the 15th of January, 1714, he was entitled "George London, Esq." The introductory sentence of his will, dated December the 2nd of the previous year, also designates him "of St. Martin's-in-the-Fields, Gentleman." He had, therefore, a residence near St. James's Palace, rendered necessary, probably, by his office of page. It is described in his will as the "house where he then dwelt, which, with the garden and appurtenances, were taken out of the Woodworks near Spring Gardens." That house and grounds cost Mr. London, according to particulars we have, £267 14*s.* 8*d.* He had to purchase the right of possession from "Esqe. Povey," who was the previous grantee from the Crown. At that time some part of the ground was farmed, and we can hardly realise that for a purchase of ground in Spring Gardens £5 "had to be paid for the Corne upon ye Land." The purchase was completed in the April of 1693, for Mr. London's book-keeper then entered, "Paid at the reaconing at the Crowne Taverne, at Charing Cross, at the meeting about sealing the lease for the new house, 01—00—00."

Mr. London directed that he should be buried in the parish church of Fulham, "near the body of his first dear wife Rebecca," adding the dictate of common sense, "the funeral expenses not to exceed forty pounds." There, as he wished, his body rests, and in the same grave with his second wife, Elizabeth, who died in 1732, and on the slab in the aisle is recorded that she was "widow of Mr. George London, who is here interred."

He had acquired considerable property, for he had lands at Kingston and Long Ditton, shares in the Welsh lead mines, called St. Carbury, which he devised to his eldest son George. His share in the Brompton Park Nursery he bequeathed in trust for his youngest son John. He had three daughters, all married to members of the upper ten thousand. Katherine was become Mrs. Elford; Rebecca, dead at the time of the will being executed, had been Mrs. Woodward; and Henrietta was the wife of Sir John Peachey, and their second son was created Earl Selsey. Henrietta, we can testify, was a skilful artist. Her father bequeathed to her his "fine book of Surinam plants in colours, to which are annexed her drawings of plants in colours, pourtraying forty plants from the Cape of Good Hope, and several fruits in colours, bound in rough leather, they being all drawn by her." Some of her drawings we have seen in the library at Badminton. There are many money legacies to grandchildren and cousins, an annuity to his widow, and the use of his "silver tea-kettle stand" and other plate, all testifying that he had won his way well up in the ranks of society.

To the poor of Fulham he left £5. Was it his birthplace? or was the gift born of that turning of the heart which all must feel towards the place of their early happiness and prosperity? We know that at Fulham he was the long-trusted gardener of Bishop Compton, that there he married his first wife, and that the union was happy is told that there he wished to rest finally by her side.

Before we withdraw our pen from this subject, we must record the pleasure we derived from the depositary where we found Mr. London's will. That depositary is Doctors' Commons. Thither we resorted with no vagrant intent, but were received with such courtesy by J. F. Coleman, Esq., one of the keepers of the records, and he so genially led the way through the marvellously well-arranged store halls, that we gladly diverged from the immediate object of our research. To preserve the records from destruction by fire, no wood forms any part of the building or its fittings—rafters, floorings, staircases, shelves are all of iron or thick glass. The wills are chronologically arranged—the months of each year being in labelled packets, so that the date being known, any will is promptly found, and of the wills of modern date even an alphabetical index to the testaters' names is printed.

Our kindly guide placed before us the will of "William Shakespere"—for that is his own spelling of his very legible autograph. The will is on three sheets of writing paper, each sheet between two panes of glass, and framed, to preserve them from the fingers of the thoughtless "Man of Feeling." Then we looked upon the will of William Pitt, short and unconnected, evidence that though a worthy foeman of Fox in debate, he was not his equal in literary composition. Next was shown the will of "Nelson and Bronte," written in large characters with the left hand, as shown by their leaning inversely, written, too, in a small book red-leather-covered, such as tradesmen send to customers detailing the week's account. Lastly, we saw the will of "Wellington," unmistakeable both in its caligraphy and straightforwardness. Of the earliest wills there are very many volumes of copies on parchment, some brilliantly illuminated, and others, especially one dated 1581, the most beautiful—perfectly uniformly beautiful—examples of penmanship we ever perused.

Nor were the concluding minutes of our visit the least gratifying, for our tender of thanks was met by the response, "No, I'm in your debt, for you have led me to, and instructed me in, gardening."

Potatoes in Great Britain and Ireland.—The number of acres in Great Britain planted in 1869 were 585,211, and in 1870

587,661. In Ireland in 1869 there were so planted 1,041,837 acres; and in 1870 there were 1,043,788 acres.

ROYAL HORTICULTURAL SOCIETY.

MARCH 15TH.

SPRING SHOW.

A CHILLY north-west wind and large flakes of snow, which melted as they fell, gave early in the day but a poor prospect of an enjoyable Show even if held, as that Show was, in the Conservatory. Still, unfavourable as the morning was, it was not so much so as one which some can remember, who in that same Conservatory had "to dodge" the falling squares of glass, broken by the weight of the sliding snow, and there was room to hope for better things; nor was hope disappointed, for as the day advanced the sun broke forth and gave the wished-for warmth and life. Mr. Eyles, however, had provided against all contingencies, and whilst securing the Conservatory for warmth, he had an awning which at once protected the flowers from the sun and showed them off to advantage. As regards the quality of the exhibition, horticulturally speaking, it was fully equal to that of last year, and nowhere was any falling-off visible. The Hyacinths and the Tulips were simply magnificent, and it must be noted that the largest portion of the display, both of these and miscellaneous subjects, came from exhibitors showing in a way in which they could derive from the Society no prizes which could nearly compensate them for their trouble and expense. This speaks well for the good feeling which exists towards the Society, and the general wish to promote the success of its objects. The attendance of visitors was most satisfactory.

Class 1 was for eighteen Hyacinths, distinct sorts. In this Messrs. Veitch were first with splendid massive examples of the following—viz., *Single Red*, Vanrbank, fiery crimson, very brilliant and effective; Macaulay, Garibaldi, remarkably fine. *Double Red*, Koh-i-Noor. *Mauve*, Haydn, very fine. *Single Blue*, King of the Blues, very fine; La Grande Resemblance, Charles Dickens, Blondin, Grand Lilas; General Havelock and Feruck Khan, of the black shades. *Double Blue*, Laurens Koster. *Yellow*, Ida. *Single White*, La Grandesse, magnificent; Alba Maxima, L'Innocence, and Leviathan, very fine. Messrs. Cutbush were second, also with a splendid collection, but with some of the varieties not equal to those in the first-prize collection. Messrs. Cutbush's collection consisted of—*Single Red*, Von Schiller, very fine; Florence Nightingale, Princess Clothilde, Macaulay, a grand spike; Giganteu. *Double Red*, Duke of Wellington, fine. *Single Blue*, Lord Palmerston, fine; Charles Dickens, Czar Peter, fine; Argus, Baron Von Tuyll, Marie, fine; and General Havelock and Feruck Khan of the black shades. *Single Yellow*, Ida. *Single White*, Mirandoline, Queen of the Netherlands, and Grandeur à Merveille.

Class 2 was for eighteen White Hyacinths. In this Messrs. Veitch were again first with a remarkably fine collection, consisting of Madame Van der Hoop, with large white bells, very broad in the segments; La Grandesse, equally fine, and with a larger spike; Baroness de Vander Duin, Grand Vainqueur, Orondates, Snowball, fine; Leviathan, a very fine blush; Queen of the Netherlands, Paix de l'Europe, Madame de Stael, Alba Superbissima, La Candeur, Mont Blanc, Grandeur à Merveille, Lord Shaftesbury, with bells of remarkable size; L'Innocence, Alba Maxima, and Prince of Waterloo, double. Messrs. Cutbush were second with several of the above kinds; Tubiflora, Voltaire, and Maria Cornelia of the blush shades; Princess Helena, Victoria Regina, &c.

In the amateurs' Class 3, six varieties, Mr. J. Douglas, gardener to F. Whitbourn, Esq., Loxford Hall, Ilford, was first with excellent spikes of Koh-i-Noor, Marie, Florence Nightingale, De Candolle, Alba Maxima, and Baron Von Tuyll. The second-prize lot came from Mr. Weir, gardener to Mrs. Hodgson, Hampstead, who had some very good spikes; and the third prize went to Mr. F. Stephenson, Tredegar Place, Bow Road.

Class 4 was for six new kinds never before exhibited. Messrs. Cutbush were first with Robert Lowe, pale yellow, and promising to have a larger spike than the older yellows; Lord Derby, blackish purple; Marquis of Lorne, with a magenta stripe along each segment, shading-off towards the edges, and having a fine close spike; George Peabody, brilliant rosy crimson, a splendid colour, and when the bulbs become stronger if it produce a closer spike it will be a great acquisition; W. M. Thackeray, rich plum; and Lilacina with a large loose spike of purplish lilac bells, with a deep shade in the centre of each segment. The second prize went to Messrs. Veitch for Brilliant, a very promising crimson; Prince Teck, a large-belled double pale porcelain blue, but rather loose; Princess Louise, with numerous pure white bells; Von Moltke, much in the style of Lord Palmerston, but darker, with a mauve tinge; M. Thiers of the black class, and Mauve Queen.

Narcissi, for which the prizes were offered by Mrs. Lloyd Wynne, came next in the schedule. Messrs. Cutbush were the only exhibitors, and took the first prize for the best collection, and admirably bloomed it was. Bazelman Major, Grand Monarque, Soleil d'Or, Gloriosa, and Perle Blanche were especially good.

Class 6 was for the best twelve pots of Tulips of six kinds. In this Messrs. Veitch were first with Fabiola, Rose Applati, Vermillon Brillant, White Pottebakker, Proserpine, and Keizers Kroon in splendid bloom. Messrs. Cutbush were second with Rose Applati, Jaght van Rotterdam, Duc d'Aremberg, Joost van Vondel, White Pottebakker, and a kind called Proserpine broken, but which we are assured by an eminent Dutch grower is Pierot Feuillermorte, or Manrice Granade. In the amateurs' class Mr. Weir, gardener to Mrs. Hodgson, was first, and Mr. Searle, gardener to B. C. Steele, Esq., Marlesford Lodge, Hammersmith, was second.

Crocuses were on the whole poor. The first prizes in the nurserymen's and amateurs' classes went to Messrs. Cutbush and Mr. Stephenson respectively; Mr. W. Paul, however, showing a fine lot not for competition.

The only exhibitions of Double Wallflowers came from Mr. Woodward, gardener to Mrs. Torr, Garbrund Hall, Ewell, consisting of large plants in tolerably good bloom, and from Mr. Ware, of Tottenham.

The best six plants of Mignonette consisted of nicely-trained, very fine pyramidal bushes in excellent bloom from Messrs. Rollisson, of Tooting. A third prize was awarded to Messrs. Standish for small plants with large heads of bloom. For pyramidal plants the first prize went to Mr. R. Laing, gardener to P. W. Flower, Esq., Tooting Common, for three well-grown plants 4 feet high. An extra prize was given to Mr. Goddard, gardener to H. Little, Esq., Cambridge Villa, Twickenham.

Miscellaneous groups of plants constituted one of the main features of the show, and were most attractive. Messrs. Veitch exhibited a splendid bank of Roses, Hyacinths to the number of 150 pots, equal in quality to those in their first-prize collection, and a gorgeous collection of Tulips, the whole most effectively arranged. Mr. W. Paul also sent, not for competition, a group of bulbous plants, consisting of Hyacinths, Tulips, and Narcissi, the whole of which well maintained the high reputation he enjoys for the successful cultivation of this class of flowers. Mr. Wilkie, gardener, Oak Lodge, Kensington, had a first prize for a collection consisting of Rhododendrons, Azalea amœna, Dendrobium nobile, &c.; and Mr. Ware a second prize for a collection of spring flowers, in which were beautiful pansful of Scilla sibirica, Erythronium dens-canis, and the blue Grape Hyacinth. Mr. Williams sent an excellent group of Orchids, Palms, and other plants; Messrs. Rollisson a group of Palms and Dracænas; Mr. Bull, Orchids, Palms, and Cycads, together with a number of grafted Aucubas densely clustered with berries, though the plants were but small. For these a special certificate was given. Messrs. Cutbush also sent a beautifully variegated sort. Mr. Ware sent a fine collection of Alpines; Messrs. Lane, Camellias in pots, also cut blooms of the same; and Mr. Howard, gardener to J. Brand, Esq., Balham, had a special certificate for fine boxes of cut blooms.

Messrs. Standish & Co., Ascot, sent a number of Cinerarias of new kinds, some of them very beautiful in colour, Rhododendrons, and Aucubas. Mr. Denning, gardener to Lord Londesborough, Grimston Park, contributed a very effective group of Orchids, containing fine specimens of Dendrobium Devonianum, forming a wreath round Vanda tricolor; Lælia cinnabarina, extremely brilliant; Cypripedium hirsutissimum and others, and Cymbidium eburneum.

By far the grandest exhibition of Orchids we have seen for some time was that from Mr. May, gardener to Lady Ashburton, Melchet Court, Romsey, who had Phalænopsis Schilleriana with, it was subsequently stated at the meeting, no less than 80 flowers, forming a glorious mass of delicate purple-tinted rosy blossoms, more like one of those beautifully tinged clouds of an early autumn sunset than anything else we can compare it to. Cœlogyne cristata, gold and white, as well as Dendrobium speciosum, were also magnificent specimens. It is almost superfluous to state that the Committee marked their appreciation of the Phalænopsis with a special certificate, and further recommended the collection as worthy of the Lindley medal. Mr. Speed, gardener to the Duke of Devonshire, Chatsworth, sent cut specimens of Amherstia nobilis, so rarely seen in this country, and then of late years from Chatsworth only. For these a special certificate was given. A similar award was made to Mr. Needle, gardener to the Comte de Paris, Twickenham, for a box of Ophrys tenthredinifera, which had been brought by the Comte de Paris from the Pyrenees; to Mr. Bull for Musa africana, for Orchids, and for Palms, &c.; to Mr. Williams for his miscellaneous group, and to Messrs. Rollisson for Palms, &c. Several extra prizes were awarded in the miscellaneous class, as will be found in another column.

FRUIT COMMITTEE.—G. F. Wilson, Esq., F.R.S., in the chair. A tray of Lettuce and Endive was exhibited by Mr. Looker, which had been grown in his Acme garden frame. William Sunday, Esq., Radcliffe-on-Trent, Nottingham, sent a dish of Winter Crasanne Pear (named Bergamotte Esperen), grown on diagonal cordons, planted against a west-south-west wall, 16 inches apart. The largest specimen grown weighed 9 ozs. The fruit was very well flavoured. Mr. Wildsmith, gardener to Viscount Eversley, Heckfield, sent three bunches of Lady Downe's Grape, which were cut on the 10th of January, and kept in bottles of water in a dark place. They were awarded a special certificate. Mr. Thomson, of Dalkeith, sent a handsome bunch of White Lady Downe's, but the flavour was deficient. Mr. Phipps, gardener to Lord Shrewsbury, at Ingestrie Hall, sent a very interesting and valuable exhibition of three fine bunches of Gros Guillaume, and also bunches of Lady Downe's, Trebbiano, Alicante, and White Tokay. This was a very meritorious exhibition; all of them were handsome bunches, and in fine condition, and the flavour in every case was

excellent. Two special certificates were awarded, one to the Gros Guillaume, and another to the other four bunches.

Prizes were offered for the best three dishes of dessert Apples, and for the best three dishes of kitchen Apples, of distinct varieties; also for the best three heads of Broccoli. Of the last-named there was no exhibition.

For three dishes of dessert Apples Mr. Lynn, gardener to Lord Boston, Hedsor, was first with Ribston and Cockle Pippins, and Scarlet Nonpareil; Mr. Parsons, gardener to W. J. Blake, Esq., Daneshury, being second with Cox's Orange, Cockle, and Wyken Pippins. In kitchen Apples Mr. Lynn was again first with Golden Noble, Dumelow's Seedling, and Kentish Fillbasket; Mr. J. Beach, gardener to J. Herries, Esq., St. Julian's, Sevenoaks, was second with highly coloured fruit of Winter Pearmain, Blenheim Pippin, and Bess Pool.

Mr. Sage, gardener to Earl Brownlow, Ashridge, sent a fine dish of Keens' Seedling Strawberries weighing 24 ozs., and which would certainly have had an award if they had not arrived too late for the Committee.

Floral Committee.—Mr. J. Fraser in the chair. Messrs. Veitch received a special certificate for splendid pans of cut blooms of the beautiful Hippeastrum pardinum and Leopoldii, and a first-class certificate for Amaryllis Chelsoni, a most beautiful, very bread-petalled, rich scarlet variety; Primula Boviana from Abyssinia, with long-stalked pale yellow flowers, had a second-class certificate.

Mr. Bull sent Areca regalis, a handsome Palm, which had a first-class certificate; also a fine pan of Goodyera Dawsoniana picta, for which a special certificate was awarded, together with Musa africana and several other plants. A special certificate was also given to Mr. Lawrence, gardener to Bishop Sumner, Farnham Castle, for a fine specimen of Dendrochilum glumaceum.

Messrs. E. G. Henderson & Son, St. John's Wood, sent Caladium Prince Albert Edward, beautifully marked—silver, green, and crimson—Princess Alexandria, and others, for which a special certificate was awarded; also a handsome Asplenium from New Zealand, which had a first-class certificate.

From Mr. Goddard, gardener to H. Little, Esq., Twickenham, came a basket of seedling Cyclamens, of which Snowflake, a very fine pure white, had a first-class certificate. Another, called carminatum, was very bright in colour. Messrs. Rollisson had a very fine pan of the pretty white Primula nivalis, also Davallia clavata, a slender-growing species from Jamaica. To this a first-class certificate was given.

From Mr. William Paul came new Hyacinths, several of which promise to be good. Princess Louise, of the Double Red class, rose, with a pink stripe, and having a good spike, received a first-class certificate. One called Voltaire was in the way of Lord Palmerston, and another was a pretty mauve. First-class certificates were awarded to Messrs. Cuthush for new Hyacinths Marquis of Lorne, George Peabody, and W. Thackeray, which have been already noticed. A first-class certificate was also given to Mr. Bennett for a beautiful new bright peach Rose, called Marquise de Castellane.

From W. Gumbleton, Esq., came a plant of Triteleia porrifolia, which, it was stated, has the same objectionable odour of Garlic as its congener T. uniflora. Mr. Barnaart, of Vogelenzang, Haarlem, brought a Trillium named tulipiferum; the flowers, however, were of a metallic but rather dusky appearance.

Mr. Wilson, gardener to W. Marshall, Esq., exhibited Cattleya Triange Princess Mary of Teck, an extremely beautiful variety, and Uranus, another splendid variety with a richly coloured orange and purple lip. Odontoglossum roseum, a beautiful bright-coloured species, came from Mr. Lawrence. Many other subjects for which the Committee gave special certificates, have been already noticed as forming part of the general exhibition.

General Meeting.—Lord Henry Gordon Lennox, M.P., in the chair. Twenty-one new Fellows were elected, and after the Committee awards had been reported to the meeting, the Rev. M. J. Berkeley offered some remarks on the most important subjects exhibited. With regard to Mesna ferrea shown by Mr. Bull, at first sight it seemed allied to a Brownea, but the leaves of the Mesna were simple, though seemingly pinnate, whilst those of the Brownea were pinnate. Its wood was so hard as to be known in the East Indies as Ironwood, and its flowers when dried were to be found in every bazaar under the name of nagkesur; they are sweet-scented and used in medicine. Mr. Berkeley then brought under the notice of the meeting specimens of Heaths he had received from Mr. Wilson Saunders, showing the effects produced on them by cold were similar to those of heat, as exemplified in an Oak struck by lightning. He also exhibited a specimen of the bread eaten during the siege of Paris, far worse than anything ever seen during the Irish famine. Certainly nothing but absolute famine would have induced anyone to eat it.

Mr. Bateman then called attention to Amherstia nobilis, which he considered was the most beautiful of all vegetable productions, and on which he had given a lecture five years ago (see vol. x., page 240). He then pointed out the most remarkable of the Orchids, specially noticing the magnificent specimen of Phalænopsis Schilleriana, and Odontoglossum roseum, which he said came from within 1000 feet of the snow line on the mountains of Peru. After some remarks on the difficulties experienced by collectors in not being able to send their plants from the head waters of the Amazon, a course of 3000 miles, he referred to the artificial fertilisation of the Aucuba, by which alone he thought the berries could be produced in such abundance as on the plants shown that day by Mr. Bull. A letter had been received from Mr. Hanbury, of Clapham Common, requesting information on the species of Vanilla of which the pods come into commerce, and some of which were inferior in quality to others, for example, the kind imported from Brazil. Next meeting he hoped, this request being made public through the press, they would be able to extract all the information required respecting the Vanilla.

Mr. Bateman concluded by reminding the meeting, that the bazaar in aid of the French relief fund would be held on April 19th, in the Council Room and adjoining hall and arcade, and invited contributions.

PASSIFLORA QUADRANGULARIS.

This plant is not surpassed by the Vine for fruitfulness under ordinarily favourable conditions; and it is a mistake to suppose that it will not set its fruit without being impregnated with pollen from P. edulis, as has been asserted on several occasions by some writers.

In December, 1869, we bought two plants from the nursery—newly-struck cuttings in 3-inch pots, each about 9 inches high. They were taken out and potted both together in a 14-inch pot as one plant, and plunged in a Pine bed. The Pines were started gently in February, and the Passiflora was allowed to grow on along with them. It soon began to grow freely, and was trained up a pillar and along a narrow space under the apex of the span roof close to the ventilators; seven or eight shoots were led away from the stem at the top of the pillar, all others being cut clean out as they appeared, allowing those that were retained to grow as much as they pleased. By August each shoot had attained a length of about 18 feet, and began to show flowers along the whole length; and all expanded nearly simultaneously, for in three days one hundred blooms were set successfully, with the exception of two or three—in some places three or four in a cluster on short spurs. All the fruit attained the size of pigeons' eggs, when, out of sheer inability, I suppose, of so young a plant to bear such a crop, exactly one-half of the fruit suddenly shrivelled and dropped off, particularly where set in clusters. From this time also the plant ceased making more wood, and the fruit swelled fast, and began to ripen about the beginning of November, filling the house at the same time with a peculiarly strong aroma. Being all set about the same time, the fruit was nearly all alike in size, the biggest weighing ½ lb. each. Throughout the summer the heat of the Pine bed into which I found the Passiflora had rooted, ranged from 85° to 90°, top heat the same. A few days ago the shoots were shortened back, and the roots, which had found their way through the bottom of the pot, were cut off, but the leaves are yet vigorous and green.

The edible part of the fruit consists of the seed and pulp inside, and has a peculiar and refreshing flavour. When eaten, a slice is taken off the side of the fruit, a slit made in the tough sack which contains the seed, a little Madeira sherry poured in, and the contents supped out like an egg.—J. Simpson, *Wortley.*—(*The Gardener.*)

MR. THEODOR HARTWEG.

This well-known botanist and horticulturist died on the 3rd of February, being at the time Inspector of the Grand-Ducal garden at Schwetzingen, Baden. He was a native of Germany. In 1836, being then the clerk at the Royal Horticultural Society's garden at Chiswick, he was selected to proceed to the elevated regions of Mexico for the purpose of collecting plants. He sailed from Liverpool in the October of that year, and landed at Vera Cruz on the 3rd of December. In less than ten days he reported, "I send the long-wished-for Veratrum Sabadilla, rather scarce in this neighbourhood, but growing abundantly towards Orizaba. I also send a pinnate-leaved Berberis, which will be a new acquisition to the half-hardy shrubs." This was Berberis tenuifolia. These and more than thirty species of Orchids, Cacti, &c., arrived safely packed in Tillandsia usneoides. Soon afterwards he sent a Lupine, now known as Lupinus Hartwegi. He also discovered and sent home, with many others, seeds of Fuchsia fulgens, Berberis Hartwegii, Pinus Hartwegii, and Hartwegia purpurea, which he mentions as "the little plant bearing my name." He returned home in 1843, taking Jamaica in his way. He revisited Mexico in 1845, and remained for three years. Details of some of his pro-

cseedings are in the Horticultural Society's "Transactions," and in the "Proceedings" of the Society. The plants he discovered have been described by Mr. Bentham, and published under the title "Plantæ Hartwegianæ." In 1848 he was in California, where he found several new Coniferæ. Soon after that year he returned to his native country. An opinion at the time was entertained by some that he was dismissed from the Horticultural Society's service hastily and uncourteously, on the plea that he had not fully communicated his journals to the Society. He probably thought at the time that the dismissal was a misfortune, but, as is often the case, it was a veiled benefit, being the origin of his success. He became one of the gardeners of the Emperor of Austria, who originally enabled him to come to England, and finally he obtained the appointment which we have noted that he held at the time of his decease.

PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

Amaryllis Rayneri is identical with Hippeastrum procerum.—(*Bot. Mag.*, *t.* 5883.)

Asystasia violacea is probably A. chelonioides.—(*Ibid.*, *t.* 5882.)

Beloperone ciliata (Ciliated Beloperone). *Nat. ord.*, Acanthaceæ. *Linn.*, Diandria Monogynia.—Native of Peru and New Grenada. Flowers reddish-purple and white.—(*Ibid.*, *t.* 5888.)

Saxifraga longifolia (Long-leaved Saxifrage). *Nat. ord.*, Saxifragaceæ. *Linn.*, Decandria Digynia.—Native of the Pyrenees. Well suited for partially shaded rockwork. Flowers white, in a dense thyrse a foot high.—(*Ibid.*, *t.* 5889.)

Xiphion junceum (Rush-like Xiphion). *Nat. ord.*, Iridaceæ. *Linn.*, Triandria Monogynia.—Native of Algiers. Flowers yellow.—(*Ibid.*, *t.* 5890.)

Massonia odorata (Sweet-scented Massonia). *Nat. ord.*, Liliaceæ. *Linn.*, Hexandria Monogynia.—Native of Colesberg, South Africa. Flowers white.—(*Ibid.*, *t.* 5891.)

Tillandsia ionantha (Violet-flowered Tillandsia). *Nat. ord.*, Bromeliaceæ. *Linn.*, Hexandria Monogynia.—Native of Brazil. Flowers pale violet.—(*Ibid.*, *t.* 5892.)

Agave ixtlioides (Ixtli-like Agave). *Nat. ord.*, Amaryllidaceæ. *Linn.*, Hexandria Monogynia.—Probably a native of Mexico. Flowers yellowish-green; anthers yellow, conspicuous.—(*Ibid.*, *t.* 5893.)

Fig.—*Royal Vineyard.*—"One of the very finest Figs yet brought into cultivation. Of late years considerably more attention has been bestowed on Figs; their cultivation is becoming better understood; their high merits as dessert fruit better appreciated; and many high-class varieties, before almost unknown to us, have been introduced to our gardens and to our tables.

"The Royal Vineyard Fig is above medium size, of a long pyriform shape, very prominently ribbed in longitudinal lines. the surface warted or carbuncled. The skin is very thin and tender, rugose or bristly; its colour a pretty reddish-brown, darker towards the eye, and covered with a thick bluish bloom. The eye is large, open, and prominent; the stalk long and slender, which, combined with the long pear-shape of the fruit, gives it a very lengthened appearance. The flesh is of a clear bright reddish colour, firm, yet very juicy and melting, with a small central cavity. Every portion of the fruit, skin and all, is eatable; and the flavour is particularly rich and excellent—indeed, it may be described as super-excellent. The habit of the plant is free and moderately robust; and the leaves are large, and rather deeply-lobed. It is very prolific and a free bearer, the fruit ripening about mid-season.

"In many respects this Fig resembles the Brown Turkey, or Lee's Perpetual. The habit and free-fruiting qualities of the plant are much the same. The fruit is somewhat of the same shape and form, but that of the Royal Vineyard is rather longer than the Brown Turkey, and the warm reddish tinge of the former is very distinct from the dull brown or chocolate hue of the latter. In flavour also the Royal Vineyard is infinitely superior. It is, in fact, one of the highest-flavoured Figs in cultivation, and will succeed under the ordinary treatment required for the Brown Turkey.

"We are indebted for this acquisition to the Messrs. J. and C. Lee, of Hammersmith, who found it without a name in their extensive collection of Figs; and since it has proved so distinct and worthy, it has been named, after their nursery, the Royal Vineyard. The Messrs. Lee report on one special quality they have noted in it—namely, 'the invariable persistence of the fruit, in growth, flowering, and ripening, scarcely an instance of its casting its fruit having been observed.'"—(*Florist and Pomologist*, 3 s. iv. 49.)

DINNER-TABLE DECORATION.—No. 3.

I must not close these articles without adverting to another novelty introduced upon the dinner-table, and that is a fountain in play. To some, perhaps, this would suggest itself as being neither more nor less than a toy; but to how many other things in this world is the same term applicable? A fountain in play is one of the latest novelties that I have seen, and I need hardly say it is one which creates a greater disturbance in the order of things as they were, than any of the other innovations previously described, for water has to be laid on and taken away again, passing up through the room floor and its carpet, as well as through the table. The latter sacrifice, however, was a very slight one in our case, as a portable piece of table, called, I think, a leaf, was made of a common description of wood, a hole was cut in that to fit the apparatus to, and two tablecloths instead of one were used. The credit or otherwise of such devices of course belongs to the machinist who constructs them, but I must say that any of the forms in which water is seen in larger fountains can be copied in a small way. The two fountains which we have present some half dozen forms, which can easily be increased if desirable. In extremely hot weather the sound and appearance of cold water are agreeable, while as an object of ornament water is capable of being made attractive as well, for the bottom of the basin of one of the fountain decorations which we have in use is a mirror, and round its sides is fixed a trough to be filled with flowers, &c., some of which are made to overhang and lap into the water. Aquatic plants of small growth may also be introduced, and occasionally the central pipes which emit the water may have their bases concealed by miniature rockwork with a suitable mixture of foliage, in which small pieces of Fern are very appropriately used amongst broken pieces of quartz, spar, granite, or other stone. Here, again, I fancy some will exclaim "These are toys!" but if that term has to be applied here, what is to be said of the ordinary rockwork of gardens, for that is only a miniature imitation of Nature's grand features? Such a fountain decoration as that referred to affords ample space for the exercise of taste, and is capable of being decked-out in a fresh garb every night, for the bordering affords space for a good floral display, while the internal fittings, as well as the working of the mechanical parts, can be varied. The fitting-up, as well as the regulation of the force of the water, ought to be in the hands of some very careful person, for a delicate apparatus like this is apt to create a disaster if tampered with; in our case, however, I have hitherto been fortunate, but there is more trouble than might be expected in arranging everything properly.

As lists of plants suitable for table decoration have been given in the pages of The Journal of Horticulture, I have little to add except that these lists are far more extensive than I have ever had occasion to bring into use, and some I have never been able to do anything with—for instance, bulbs of all kinds, for they have not enough foliage, in my estimation, to be worth a place. In my opinion the requisites in a plant to be used for dinner-table decoration are, that it should not exceed 18 or 20 inches in height from the tablecloth; that it should have a uniform head, and, if possible, recumbent foliage; also that it should not require a large pot. The number of plants conforming to these requirements is not large, but I have used the following—viz., Crotons of two or three species, C. angustifolium when good being the prettiest; Dracænas both of the dark and green-leaved section, D. congesta amongst the latter being as good as any, but nothing exceeds neat plants of D. terminalis and allied varieties. Coleuses, when the foliage is in good colour, also look well, and the same may be said of Iresine; but reject both when not in trim. Grevillea robusta, a very ornamental pinnated-leaved plant is also good, while as a change the robust-looking Aspidistra elatior variegata is a strong contrast, but looks exceedingly well when a fairly-grown plant is seen. Several Ferns are indispensable—none are more graceful than some of the Maiden-hair section; Lomaria gibba and several others are also good. Latania borbonica is about the best Palm I have tried, being very elegant. Now and then a well-grown Tricolor Geranium is worthy of a place; and so are some of the Gloxinias and Gesneras, but I have seldom had occasion to use them. Dwarf plants of Centaurea gymnocarpa work-in well—better than the silvery Cineraria

which it resembles—as the foliage reflexes more, and is, consequently, prettier than that of C. candidissima. It is quite a mistake to condemn white-foliaged plants for night; they then look well, for there is always some separation between the foliage of a plant in a pot and the tablecloth, and that separation, be it a silver ice-pail or ornamental covering on the pot, is always of a different hue from the fine foliage. Plants in flower are also always acceptable, and Fuchsias, Geraniums, and other plants may be used in turn, while a good Cineraria with flowers having tipped edges is very attractive by candlelight, not so the self-coloured blue or purple kinds. Perhaps the most showy of all plants for the purpose, and one that may be turned to account for several months in the spring, is a well-bloomed Azalea, than which I know of nothing more suitable.

If on looking over the various papers on this subject I find anything important is omitted, I may revert to it hereafter, but in the meantime I would ask those who have had experience in the matter to record it, for there may be many modes of table decoration only known at the place where they are practised. —J. Robson.

NEW BOOK.

Alpine Plants: comprising Figures and Descriptions of the most striking and beautiful of Alpine Flowers. By David Wooster. London: Bell & Daldy.

The title of this work conveys in some measure an idea of its nature. Its object is evidently to familiarise lovers of plants generally with those charming things called Alpines, and to create in those as yet unacquainted with them a taste for appreciating some of the loveliest objects in the vegetable kingdom. The execution of the work has been entrusted to a gentleman whose literary training under the late Mr. Loudon fitly qualifies him for undertaking such a work as this, and the manner in which he has performed it fully justifies any expectation one might have formed. There are already seven monthly parts issued, and each contains three plates, with accompanying letter-press; but the plates illustrate more than one subject, as, for instance, in the first part seven plants are figured, in the second and third six, and in the seven parts that have appeared forty-one excellent portraits of some of the prettiest Alpines are given.

The manner in which "Alpine Plants" is produced is creditable both to author and artist. The literary portion is not the mere dry botanical descriptions often found in such works, but a popular description of the plant, instructions as to its culture and treatment, with any interesting information in connection with it that can be obtained. As an illustration, let us give Mr. Wooster's observations on Linnæa borealis:—

"This, which is the only known species of the genus, is a small, creeping, evergreen shrub, with opposite, roundish-oval, slightly toothed leaves, and very pretty, graceful, drooping, slightly fragrant, pale pink twin flowers. This 'little northern plant, long overlooked, depressed, abject, flowering early,' was selected by Dr. J. F. Gronovius, with the concurrence of Linnæus, as a type of the early career of the great reformer of natural history, and the father of the modern physical sciences; and (being one of the native plants of the land which gave birth to Linnæus) as most fit to bear for all time his illustrious name.

"The Linnæa is a native of high latitudes and alpine districts throughout the northern hemisphere. It has been found in Sweden, Lapland, Norway, Russia, Germany, Switzerland, Savoy, and Siberia; and in North America in several districts, but most plentifully in Canada. In Scotland it was first discovered in 1795; most generally it is found in woods, especially of Fir, more rarely in open rocky and mossy situations, chiefly in the counties of Perth, Forfar, Inverness, and Aberdeen. In England I know of only one station where the plant has been found wild (to which I have paid many interesting visits), and that is in a plantation of Scotch Firs on the estate of Sir Walter Calverley Trevelyan, Bart., in Northumberland, where it was first discovered by the late Mrs. Alexander Wadham Wyndham, daughter of the late Sir John Trevelyan, Bart.

"This very pretty, interesting, graceful little plant, which flowers in May and June, should be grown in moist sandy peat in a somewhat shady situation, and it is easily increased by separating the creeping stems when rooted. It is very suitable for growing on rockwork as a trailing plant; but it may also be most successfully grown in large pots or pans filled with moist peaty earth and grit, either in-doors in the fernery, or in the open air, in which latter case the pots or pans should stand in water.

"The American plant is usually stronger than the European one, and is by some regarded as a variety, and called *L. b. americana*.

"The Linnæa belongs to the Honeysuckle Family, which consists of trees, shrubs, or herbaceous plants, with opposite leaves, which are without stipules. The flowers of the plants of this order are most usually produced in terminal heads, corymbs, or panicles, but sometimes they are axillary. The calyx is combined with the ovary, with an entire or toothed border, sometimes scarcely prominent. The monopetalous corolla is regular or somewhat irregular, five or rarely four lobed, with the lobes overlapping each other in the bud. The stamens are inserted in the tube of the corolla, and alternating with its lobes, either of the same number as the lobes or one less, or rarely double the number. The ovary is inferior, with from three to five cells, and there are as many stigmas, which are either sessile or on short styles, or united on the summit of a single style. The fruit is generally succulent, with from one to five cells. The seeds are either solitary or few in each cell, with a fleshy albumen. Besides the well-known Honeysuckles, as other ornamental flowering plants of the order, frequently found in our gardens, the following may be mentioned:—the Snowberry (*Symphoricárpos*), the striking *Leycestèria*, and the beautiful *Weigèla*."

We heartily commend this work to all lovers of flowers; the plates are faithfully drawn and well executed, and the literary portion is, as we have already said, well done.

WORK FOR THE WEEK.

KITCHEN GARDEN.

While the present favourable weather continues attend properly to all the principal crops of early summer vegetables, as the planting of *Cauliflowers*, the sowing of *Beans*, *Peas*, *Radishes*, *Spinach*, *Turnips*, and the various sorts of *Lettuces*, and the earthing-up and stirring of the soil amongst crops already growing. Attend to former directions as to pricking-out seedlings of *Cauliflowers*, *Lettuces*, *Sweet Basil*, and *Celery* for early use; the last is sure to run to seed before attaining perfection when sown so early as to be fit to prick out now, still a small quantity proves useful for soups, &c., if not for salads.

FRUIT GARDEN.

Be specially careful that Peach and Apricot blossoms are protected by some light covering from the effects of frost. Tie down a good many of the weak and short-jointed branches of Pears and Plums on walls, or dwarf espaliers. This will be found much better than the old and spurring-back method. In the meantime cut away all over-luxuriant wood close to the stem. Destroy all insects before the trees bud; clear away all scale, &c.; apply a wash composed chiefly of clay, water, and sulphur to trees liable to insects.

FLOWER GARDEN.

With bright sunshine and drying winds it may soon require the utmost care to save recently-transplanted evergreens of large size, and no mere surface watering will be of any service. The ground about the roots, as well as the ball, should be thoroughly soaked. After applying water and allowing the surface to become moderately firm, stir it slightly with a blunt fork, which will prevent its cracking, and will also allow the sun and air to warm the soil and encourage the production of roots. Surface-dress with fine soil, and water newly-laid turf whenever it is observed to be suffering from the effects of the weather. Take advantage of the present state of the ground to stir the surface soil of shrubbery borders, to prevent the growth of weeds and give the whole a fresh and clean appearance. Do not neglect to sow plenty of Mignonette, and, if not already done, hardy annuals should be sown without further loss of time, except in cases where they are not wanted to bloom before autumn. Ranunculuses, if not already planted according to the directions previously given, should be put in without delay. Early-sown seedlings will now begin to make their appearance. They must be carefully protected from frosts and cutting winds; they will sometimes throw themselves out of the soil, in which case the root must be covered again with compost, or a slight cleft must be made in the earth, in which the young plant should be inserted. As regards Auriculas and Polyanthuses, I need not reiterate the caution I have repeatedly given as to protection, &c. A slight inattention just now may mar the whole twelve months' care. Water is apt to lodge in the cavity formed by the expanding leaves of Tulips, and when frozen this has a serious effect on the embryo bloom. In Lancashire and other parts a method worthy of imitation is adopted to extract the moisture: a thin piece of sponge is fastened to a slender cane or stick, which is inserted in the heart of the plant, from which it absorbs the moisture. An extensive bed may be thus gone over in a short time. Carnations and Picotees have suffered in many localities to a considerable extent. Harden the plants as much as possible previous to planting out.

GREENHOUSE AND CONSERVATORY.

Many conservatories are very unfit places for Heaths, being

generally too lofty and too warm for them; but some of the winter-flowering varieties are very ornamental, and should be largely employed in their decoration during the spring months. As soon as they have ceased flowering let them be pruned back, and give them a liberal shift when they start into growth, using good fibrous peat, and if they be well attended to during the growing season they will overcome any injury they may sustain through occupying an unsuitable position while in bloom. Azaleas, Camellias, Roses, early-flowering New Holland plants, and forced bulbs will keep show houses gay for some time yet. Let all plants be placed in the best possible position as regards effect, and aim at maintaining a pleasing uniformity of arrangement, and displaying the colours to the greatest advantage. Pick off decaying flowers and leaves, and endeavour to continually replace shabby plants with others in full beauty. Sprinkle the surface of the beds frequently, so as to assist in keeping the atmosphere moist, and see that the subsoil is in a uniformly moist condition. Watch for insects, and attack them as soon as they are perceived, which is the only way of preventing them from doing mischief. Continue to remove into heat those Camellias which have finished flowering. Cut them well back if in a healthy condition. Shift in due time all those that require it. Apply the engine or syringe rather freely once or twice a-day, regulating these matters according to atmospheric influence. Apply clear liquid manure to healthy-growing plants. What plants are more beautiful than robust, healthy Camellias with dark green foliage, and producing their beautiful Rose-shaped flowers as large as Dahlias, of many tints, and flowering in succession for six months of the most dreary part of the year? In some large establishments they are to be had in bloom in succession from early in October until the first week in April. Some of the earliest plants have now made or finished their growth, and are well set with flower buds; let them now be placed to rest in a suitable structure, where they should be very carefully watered for some time, and when hardened let them be set in a northern aspect during the heat of summer. Another batch will be now in the midst of their season's growth, and should have heat, humidity, and food in the shape of good manure water, regulated in strength according to their size, strength, and constitution. Prepare now for favourable opportunities of applying the engine freely to Orange trees; look well after the green fly, which these noble plants are likely to be affected with at this season when making their new growth. Fumigations of tobacco and good washings with the engine, together with top-dressings of healthy soil and charcoal, and a sufficiency of clarified manure water, are the principal means of keeping clear of blights and pests of this kind.

STOVE.

Proceed with the repotting of such plants as require a shift, and pay all necessary attention to those in active growth. To secure short-jointed wood, keep up a vigorous root-action, and let the plants occupy a place as close to the glass as possible. Specimens started early may require re-arrangement. Ixoras, Clerodendrons, and Allamandas that have become well-rooted will be greatly benefited by a careful supply of manure water, but see that it is used in a tepid state, and not overstrong. Look sharply after mealy bug and thrips, for if these are allowed to establish themselves at this season they will furnish plenty of work for leisure hours during the summer. Increase the amount of water supplied to Orchids on blocks or in baskets, and keep up a very moderate fire, in preference to shading, for another fortnight.

FORCING PIT.

Continue to remove forced flowers the moment a bud begins to open. Stop the barren shoots of Perpetual Roses; these rob the blossom buds. Take care that no plant suffers from want of water. This pit, as well as the houses, should be examined daily. Increase atmospheric moisture considerably, and syringe on most afternoons.—W. Keane.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

A very variable week of calms and gales, sunshine and shade, and frosty mornings, followed by others with a temperature of 50°, therefore requiring from the gardener constant watchfulness.

Sea-kale.—To avoid lifting more roots we covered some beds with sifted ashes to the depth of 6 or 7 inches, and then with litter, and placed dung and leaves in the trenches between. As soon as the Kale peeps through the ashes it will be fit to cut and use; and when the blanching and cutting are over, the ashes will be placed in the trench for future use. Furnace ashes sifted fine do very well, but if we had a choice we would prefer bog earth for covering, the Kale having then a clean appearance and crispness which we have never seen excelled in any other mode of treatment. These beds, with two close rows in each, were made for this especial purpose.

When we grow, as we generally do, Sea-kale in rows 2 feet apart, we usually cover with ashes and a pot, or a pot filled with sweet hay inside, leaving a hollow space in the centre. This we do when the pots are exposed without any covering outside, as without the lining inside we have found the Kale injured by a severe frost. When the pots are covered there is no necessity for lining them inside. A thickness of 8 inches or so of sweet clean tree leaves, with a little long litter over them to prevent the leaves being blown away, will blanch Sea-kale well without any pots after the end of February. The lengthening shoots will raise the leaves a little, and thus indicate where to gather. We mention these simple modes, as pots, however much care is taken, are always in danger of being broken, and sweet clean tree leaves will enable anyone to cut well-blanched Sea-kale. When no pots or boxes are employed we do not like using dung for covering, as it is apt to rob the Kale of some of its sweetness.

For early forcing in winter the simplest of all modes is to raise the roots, and place them in soil in any dark place where a temperature of from 50° to 60° can be maintained. If the heat rises above 60° the shoots will be weaker; 55° is about the best heat for securing stumpy, white produce.

Cucumber Beds.—We have had some made with a little dung, but chiefly of tree leaves from frames. We have waited longer than usual to obtain sufficient heat, owing in some degree to the nature of the weather, which was not very favourable to rapid fermentation. We like to have a good heat before putting in the soil, and then the latter soon becomes heated. We prevent anything like overheating or burning the soil by having the centre of the beds the lowest, as described in previous volumes. When the beds are in good condition we also prefer putting in at once the whole of the soil required, instead of making repeated additions by earthing-up. We have no doubt that much of the unhealthiness of plants and attacks by insects are owing to the checks given by adding at different times cold soil, and unnecessarily exposing the plants to cold blasts in the process of earthing-up. Much will be gained when the principle of avoiding checks shall be more thoroughly acted upon.

The general work has been much the same as in previous weeks' notices. We forwarded seedling Cabbages by pricking them off with a little heat beneath them, so as to have them of a good size before planting them out. We did the same with Lettuces and Cauliflowers. Our Cauliflowers under hand-lights have stood well. The only Lettuces that stood well were those planted on the east and west sides of an elevated ridge running north and south. The most of those even at the foot of walls gave way to the alternations of wet and frost.

FRUIT DEPARTMENT.

We proceeded with pruning, nailing, washing, and protecting. We delay pruning later than usual, so as to be more sure as respects the birds and what they leave behind them. We have this season been troubled less than usual. We fear the hard winter has much thinned the feathered tribes, though we have had a goodly number of visitants within these few days. In the orchard houses, except during these gales, we give air night and day, so as to keep the buds back as much as possible, as the later they are in breaking the more secure they will be. Some of ours are showing a little colour, and all are freely swelling their buds. In such a state the roots should not be dry, neither should they be too moist. We have hurried to complete tying all trees against walls, as when thus swelled the buds are easily rubbed off. During a wet day we had a little of the surface soil scraped off and removed, leaving the bulk beneath hard and firm. We shall just break that with the points of a light fork, not going deeper than half an inch. This will permit of water sinking more regularly. We shall add a rich top-dressing, and a sprinkling of fresh soil over it, so as to make all look neat and clean throughout the season. We decline moving the soil to any depth among Peach and Nectarine roots, but the mere breaking of the surface permits of watering being more regularly done, and it also shows us where watering is most needed. Peach and other houses were attended to with watering, ventilation, &c., and Strawberries in bloom and swelling their fruit had weak manure water given

them. Soot water is good to put in evaporating-pans, and so is guano water, but the latter must be used with more care, as the vapour might injure tender subjects. We have known Maiden-hair Ferns almost killed by the fumes from guano, tobacco smoke when strong, and even from the use of sulphur on a hot-water pipe when the pipe was too warm. It is rare that soot water would throw off so much ammonia as to be injurious.

ORNAMENTAL DEPARTMENT.

The heavy showers told very beneficially on a piece of fresh *turfing*, and furnished the opportunity of passing a heavy roller over the turf to bring it to a uniform level. The rains showed also where there was any deficiency, so that any little knolls could get an extra beating down before the roller was applied. Lately we alluded to some precautions to be taken in turfing where inexperienced hands are employed, and now, as respects rolling fresh-laid turf after heavy rains, the rolling cannot be done too quickly. The necessary number of men should be employed, so that without any straining the ground can be gone over quickly. A slow motion under such circumstances will be almost sure to leave the ground in humps and hollows. Even rolling walks and the sides of flower beds has a tendency to raise the grass there by degrees, and the working of hand-mowing machines exerts the same tendency, the rising being so gradual as not to be noticed at first, but it is sure to leave its mark in the course of years. We have frequently had to lower the sides of walks and a space round beds for a width of from 2 to 3 feet, when the rest of the lawn was as level as could be desired. Grass verges by the sides of walks often become unlevel from the same cause, and should be frequently rectified, as when not level, or dipping now to one side and now to the other, the beauty of their appearance is greatly impaired, and more time is taken in mowing and machining them. A small hand-mowing machine is invaluable for such verges, as it takes all the cut grass up as it goes.

We are as yet afraid to place many plants out of doors, with nothing but a little protection over them, but we are greatly straitened from want of room, and now under all glass the contest is a serious one between what will be merely ornamental and what must appear at table as the merely useful and agreeable. Among other matters, *pricking-off seedlings, and the making and forwarding of cuttings* will be of importance this month, so as to bring many things forward before the middle and end of May. Large plants may be pricked-off singly, but in the case of very small seedlings it is often preferable to prick them off in shallow pans or pots, not singly, but in little patches, and then as these grow they can be divided again and again. Not only is this a good plan for preventing damping, but the young plants thrive all the better in these little groups, and come on more quickly than if the little plants, almost untouchable, had stood at first an inch apart. Such work with seedlings and cuttings will succeed better with a little extra heat, and if anything in the way of a slight hotbed can be secured, so as to command a little bottom heat, all the better.

As respects cuttings, the rules applicable in autumn and spring should in general, for all half-hardy and tender plants, be reversed. In autumn we should give bedding plants time to strike in a cool temperature, and the cooler they are struck the more robust and hardy they will afterwards be. The merely growing tendency is then naturally on the decline, and we shall do well to humour it, instead of forcing it out of its natural habit. In spring plants in general are on the move, and in taking cuttings it is well to give an impetus to the movement. For example, if we inserted cuttings of Calceolarias in a cool place in October, we should be perfectly satisfied if they began to root in from eight to twelve weeks; but we should expect them to root in less than that number of days in a slight hotbed now, and if well hardened off before full exposure, they will make fine plants.

So far as *Verbenas* are concerned (and here we must thank those who have responded to our wishes on this matter) we have generally preferred those struck in spring, and we never had better beds than when we struck our supply in a rather wholesale way with the help of a slight hotbed and frames. The bed being made and the frame set on, there was first a layer of rotten dung placed over it, say 2 inches deep, then another inch of leaf mould and rough compost from the noduled loam; next, 2 inches of light sandy loam, with a little leaf mould in it, and just one-eighth of an inch of sand all over. In this the cuttings were inserted in lines 3 inches apart and 2 inches from each other in the row, and were watered with warm water, were sprinkled two or three times in hot days, and received no shading when they would do without it. The cuttings thus treated struck quickly and grew freely, making fine stubby plants, had air given them as they could bear it, were fully exposed before planting out, and then lifted with nice balls, the fine fresh roots ready to enter at once into the well-aired soil of the beds. We cannot, however, to-day, enter into the details of propagating by cuttings, we shall merely advert to a few matters that have come before us in our correspondence, and respecting which inquiries have been made by our amateur friends.

First, then, we adhere to what was stated lately—that the great point is never to let a cutting suffer from its severance from the parent plant more than is unavoidable, and especially in propagating in spring. We cannot help it if "ANXIOUS" cannot see how that treatment is to be reconciled with the directions so often given for making cuttings in the usual way, and then leaving them long enough for the cut bases to harden before inserting them. For all cuttings except those with milky juice, or which bleed freely, or which are of a very succulent nature, we should consider all such drying treatment as next to barbarous. Even in the case of the succulents, and very fleshy Scarlet Geraniums, if we did allow the cut ends to become a little dried we would damp or shade the tops, so that there should be no drying nor exhaustion of vital energy there. In all other cases, the sooner the cutting is inserted after it is made the better is the chance of its soon becoming a plant. We have no faith in the little things lying exposed on a potting bench. After many experiments we have never found, except in the cases referred to, any benefit from drying the ends of cuttings before inserting them.

The second inquiry has reference to the use of shallow common saucers for striking cuttings in sand, and the use of warmed water—whether it is better than striking in pots in the usual way, where there is some open soil beneath and a layer of sand merely on the top, and if any other shallow vessel would be better than an earthenware vessel with or without drainage holes in the bottom. The common earthenware flat or saucer will answer very well; and if the cuttings can only be firmed, the shallower the vessels are the sooner will the cuttings root. We should prefer zinc vessels, however, for such work. We have never found cuttings do better in any vessel than in pieces of partly worn-out zinc spouting, and, if the waterer is careful, in such shallow pans the drainage hole is a matter of little importance. The rapidity with which many cuttings strike under such circumstances is owing to the cutting going close to or on the bottom of the vessel, which thus presents an obstruction to the swelling and the callusing there, and this in self-defence causes the somewhat earlier protrusion of the roots. This is also aided by the fine sand alone being used. In these matters the supposed superiority of the system consists. Its counter-vailing disadvantage is, that as soon as rooted you must remove and pot the cuttings. They will not long thrive in the sand after rooting. Hence for general purposes there is not so much gained over using small pots in the usual way, draining them well, filling with prepared light compost, covering with a layer of sand, chiefly for keeping air from the base of the cuttings, inserting these cuttings round the side of the pot, and the base touching the side and leaving the centre of the small pot unoccupied. By this mode the cuttings can remain for some time after they have rooted and yet flourish, can be broken off with little balls when it is desired to pot or plant them, and will not suffer so much as roots taken from pure sand and treated with compost however light, but containing some portion of loam.

With regard to the confusion about shading, we can only say at present that every extra ten minutes' shading not necessary to prevent flagging, weakens and drains the cutting, and prompts it to lengthen upwards instead of sending roots downwards. A skiff with a syringe over the tops will often be much better than shading; and if the cuttings are from 24 to 30 inches from good glass, the greater diffusion of the light, and, as stated above, a dew-like skiff from the syringe will render much shading unnecessary.—R. F.

TO CORRESPONDENTS.

HARDY ORCHIDS (*J. H.*).—You should apply to some of the nurserymen who advertise in our columns, for the Orchids and other flowers you name.

WEATHER PREDICTIONS (*Amateur, Cirencester*).—We cannot ask the gentleman you name to predict the weather of the coming summer.

FLOWER BED (*F. I. C.*).—We approve of the proposed mode of arrangement. For the second border we would have a narrow line of Cerastium, then blue Lobelia, Golden Chain Geranium, and a dwarf scarlet variety for the centre.

Ribbon Border (*G. Devon*).—As you are short of Tom Thumb we would plant the border thus:—Cerastium, Lobelia, and Mrs. Pollock Geranium, with the blooms removed; Brilliant Geranium, Calceolaria, dwarf; Iresine Herbstii, Christine Geranium, Flower of the Day, large plants; Stella Geranium, Ageratum mexicanum, and Purple King Verbena; or Coleus could take the place of Iresine.

Carnations and Picotees (——).—We do not know of any such varieties.

Seedling Violet (*M. C.*).—We do not detect any novelty in the seedling, either in colour or form. It is the common Violet, Viola odorata.

Bouquets (*M. W.*).—There is no book on the making of bouquets. There are many communications on the subject in our back volumes. If you enclose twelve postage stamps with your address, and order Nos. 78, 349, and 431 to be sent, you will in them find much information on the subject. Chevreul's work is of no use. We shall publish some notes by Mr. Robson as soon as we can spare space.

Weak Manure Water for Strawberries (*J. B.*).—The weak manure water for Strawberries recommended by us was intended for plants in pots under glass. Strawberry plants, however, in the open air, in ordinary seasons, would be greatly benefited by a manure watering when the plants were in bloom and swelling their fruit, if the ground were at all dry. At ripening time the less water the better.

Planting a Vinery (*Reader*).—The proposed plan will answer very well if carefully carried out, otherwise you will want a large space for the development of so much growth. The more wood the Vines make the first year the greater and healthier will be the root-action, and that after all will lay the best foundation for future success.

Cutting Back Newly-planted Vines (*J. R. G.*).—You should have pruned back your Vines before starting them. The cutting-back would depend on circumstances. If you wished to have a clean stem inside you could have left that length, rubbing off the buds which you did not wish to start. As you have cut them down you will have the young shoot all the longer We would only allow one shoot to grow.

Vines Prematurely Starting (*Kittie*).—We do not think it would be safe now either to disbud or remove, or cut back the present growth of the Vines in your greenhouse. Doing so would give such a check as greatly to injure the Vines. If the Vines are old you might select some shoots near the base, and train them as future stems, taking away other shoots as the selected ones grow. As stated a short time ago, we saw Vines that showed little fruit cut back to make a fresh start, but the fresh shoots were mostly without fruit, and very weak, and the Vines were much injured.

Turning-out Bedding Geraniums (*Idem*).—You can turn out your Geraniums for bedding into frames as soon as you like, provided you can protect them on frosty nights with mats, &c.

Tank in Greenhouse (*S. M.*).—You do not say what your tank is to be. A mere lining with Portland cement will not do. If the tank is of brick every brick should be soaked in water, then laid in cement, and afterwards if a casing of cement be put over it, it will do. A very small saddle boiler will suit your purpose. For such a small place a pipe bent over or in the fireplace ought to do. Could you not get bottom heat from the flue without a tank or boiler?

Ventilating a Glass-covered Wall (*N. R. B.*).—We should not have any fear of the perforated zinc as a conductor of heat; but in all such houses, instead of mere squares of perforated zinc, it is better to have front and top ventilation entirely at command, so that you can give it freely in warm and shut it off in cold weather.

House for Cucumbers, &c. (*M. H. B. L.*).—A bed 4 feet wide would be ample for Cucumbers. If propagating in a 10-feet-wide house were your object you could have it wider, or you could have two beds 8½ feet wide, one on each side. For each bed you will need two 4-inch pipes for bottom heat, and for top heat you will require two pipes on each side. It will be best to be able to give top or bottom heat separately at pleasure. We would not sink the pipes, but return them at the doorway. You will have abundance of front air in the flaps, but you should have the means of regulating them, so as to give a half-inch opening when necessary instead of a 9-inch one. Much front air will not be wanted. In a 6-feet pit we find 4½ inches in each light sufficient. You will want to more than double your top ventilation, and even there half an inch all the way will often be better than large openings far apart.

Monochætum ensiferum Culture (*S. F.*).—It does not require a stove, but an intermediate house, or one with a temperature of 45° from fire heat in winter. A compost of equal parts of loam, peat, and leaf soil will grow it well, giving good drainage. When growing it requires a moist atmosphere; from now to August afford a moist atmosphere, sprinkle overhead twice daily, and admit air freely. Water so as to keep the soil moist, but allow it to become dry before giving moisture, and then before the plants flag supply enough to show at the drainage. The plant succeeds well in a pit in summer, or in an airy greenhouse; but to flower freely it should have a temperature of 45° in winter. Be careful not to overwater in winter.

Cyclamens not Flowering (*Idem*).—We do not perceive the advantage of keeping them very wet when they had no leaves. Continue them in the house until May, then remove them to a cold frame, and in June plant them in the open ground in a sunny situation. At the end of August take them up and place them in pots twice the diameter of the corms, using the compost you name, and affording good drainage. Place them in a cold frame on coal ashes, and in September remove them to a shelf in a greenhouse, with a temperature of 40° to 45°. Shift into larger pots in October, and if you can give them a gentle bottom heat, and a top heat of 45° to 50°, they will sooner fill the pots with roots, make a stronger leaf growth, and throw up flowers more freely. Keep them near the glass, and do not water until the soil becomes dry. Maintain a temperature of 45°.

Worms in Pots (*M. S. B.*).—Worms, from making the soil sour and tending to choke the drainage, are injurious to Ferns and all plants in pots. Lime water will not injure Ferns; 1 lb of lime is sufficient for three gallons of water, which should be allowed to stand forty-eight hours, and then, closing the holes in the pots, deluge them for three hours with the clear liquid. The worms will come to the surface or be destroyed. Remove whatever is used to close the holes in the pots after three hours, to allow of the water running off. The roots are not in a healthy state, or the drainage is not good. We would repot the plants, removing all the soil parting freely from the roots. The Leptopteris superba, we think, will recover, but we would keep it moist, and in a temperature of 45° to 50°.

Caladium Culture (*Idem*).—Caladiums succeed well in a compost of two parts of fibrous loam, one part sandy peat, and one part old cow dung, with a free admixture of sharp sand. They require a night temperature of from 60° to 65°, and 70° to 75° by day, with a rise from sun heat of from 10° to 20°. Slight shade from bright sun is necessary, as well as abundance of moisture. Repot the Gloxinias, and place them in a hotbed of 70° to 75°, giving no water until they begin to grow, then keep the soil moist, and when they are growing freely remove them to the stove, assigning them a position near the glass, but partially shaded. They will flower well.

Camellia Leaves Spotted (*E. A. M.*).—The leaves sent are browned, probably, from the plants being kept in a moist, cold atmosphere. We would now repot the plants, and encourage growth by a moist atmosphere, and a temperature of 50°. Shade from bright sun, taking care to have the leaves dry by giving air early, before the sun shines powerfully on them.

Lawn Patchy (*H. H.*).—We would scratch the bare places with an iron rake, sow over them lawn grass seeds rather thickly, and after sowing rake lightly and roll well. You may now give the lawn a good dressing of short manure or rich compost, let this remain till early in April, and then, on the first rains, rake well, removing all the loose parts with an iron rake, and sow the seeds on the bare places. Sow likewise over the whole Trifolium minus, in addition to the grass seeds on the bare places, and roll well, and then do not mow until May, but both mowing and rolling must afterwards be frequent. It is bad practice to cut lawn grass at this season. Frequent rolling and mowing are the only means of keeping a lawn in good order.

Peach Tree Leaves Falling (*F.*).—The leaves sent are blistered, we think, by some destructive solution, but as you say there is an exudation we should attribute it to gum, for which there is no known remedy. The leaves are so small that we suspect the tree is in a very unhealthy state. We do not think the mischief is caused by ants, but they may feed on the exudation. Besides boiling water and guano, a solution of Clarke's Compound, 2 ozs. to the gallon, will destroy every ant it comes in contact with, and not injure the plants.

Covering for Peach Trees (*Q. Q.*) —"Tarletan" would not be too thick as a covering for Peach trees, but we fear it would not be strong enough. Nothing answers better than canvas. The bush Plum and Pear trees would be benefited by placing the branches of Fir trees over them when in blossom. They need only be used in frosty weather, and should be removed whenever the weather is mild. In frosty weather they may remain on day and night. We do not see the objection to iron for the vinery you contemplate. If well painted it is not more objectionable than wood. In the matter of repairs, none will be required for many years, but there is one objection—viz., the expense. We, like your friend, prefer wood to iron, mainly on account of the expense.

Lawn Bare (*Subscriber*).—The horse manure we would leave on until the early part of April, and then we would clear it away with an iron rake, and sow over the lawn Trifolium minus at the rate of 12 lbs per acre, raking lightly after sowing, and afterwards giving a good rolling. If in forming the lawn you took care to secure a good covering of soil all over the surface, we have no doubt that it will come right this season. If the lawn is thin of grass you might advantageously sow over it a mixture of lawn grass seeds, say 12 to 20 lbs. per acre, along with the Clover seed. If the lawn is poor you may give a dressing of bone dust at the time of sowing. It would improve it much in appearance, being the best known manure for grass.

Annuals for the Greenhouse (*Henri*).—Balsams to be sown early in April in gentle heat; keep the plants near the glass, pot them off when the rough leaves show, and shift into a larger size as they fill their pots with roots, until you have them in 8 or 9-inch pots. They require light rich loam. Celosia pyramidalis alba, atrosanguinea, aurea, and cocciuea —sow in a hotbed early next month, pot the plants off singly when large enough to handle, and continue them in the hotbed, transferring them to 4½-inch, and finally to 6-inch pots, and when these are full of roots transfer the plants to the greenhouse. Loam with one-third peat will grow them well. Cockscombs may be grown in the same way as Celosias. Browallia elata, and its varieties alba and cærulea grandiflora, sow in a hotbed, pot off three in a pot, shift into larger pots when those fill with roots, and ultimately into 7-inch pots. Amaranthus bicolor and tricolor may be grown in the same way as Celosia. Gomphrena globosa, vars. alba, carnea, purpurea, and striata, require similar treatment to Balsams. Sensitive Plant, sow in a hotbed in peat, pot off singly when the rough leaves appear, and shift into larger pots as those they are in fill with roots, and finally give 7 or 8-inch pots. Thunbergia alata, and its variety alba, sow in a hotbed in light rich soil, pot off when large enough, and as often as the pots fill with roots shift into larger pots; 8 or 9-inch pots are not too large. Being climbers, they require support. A compost of light loam two parts, leaf soil one part, and lime rubbish one part, will grow them well. For autumn you may now sow Primula sinensis in a hotbed, pot off singly when the rough leaves appear, remove to a cold frame in June, shift into 4½-inch pots in July, and into 6 inch or 7-inch pots in August, and remove them to the greenhouse in September. Cinerarias may be sown in May, and having similar treatment to the Primulas will flower early in spring. Sow Calceolarias in July in a cold frame or under a hand-light, pot off when large enough, and remove them to the greenhouse in September. Pot in October and again in February in their blooming pots. Cyclamen persicum may be sown now in a hotbed; potted off singly in small pots, and grown in heat they will flower next winter and spring. Particulars of their treatment were lately given.

Vines Planted this Season (*Idem*).—Planted now they will need to be trained with one shoot, selecting the strongest, and rubbing off all others, they being pruned, we presume, to the bottom of the rafters. The shoot is to be trained up to the top without stopping, and all the laterals or side shoots should have their points taken out above the first leaf. They will push again; let them make three or more leaves, then stop them again. After August stop all side shoots to one joint, and do not stop the main shoot until it reaches the top of the house In autumn, after the leaves fall, cut back to 3 feet, and the following season you will have

side shoots and fruit on them, which in the autumn are to be cut to two eyes, and then you have spurs. The best place for a thermometer in a lean-to is the centre, about 2 feet from the glass, the back of the instrument to the south; better if suspended under a Vine.

Desfontainea spinosa Propagating (*E. S.*).—Take cuttings of the ripened shoots—those of the current year when they become firm, and insert them in two parts of sandy loam and one part of sandy peat, with one part of silver sand, the surface of the pot to be covered with an inch deep of silver sand. Set the pots in a cool greenhouse, and cover them with a hand or bell-glass. Keep them just moist, and shaded from bright sun.

White Violets with Green Centres (*Idem*).—We think there is nothing wrong with the Violets. They will improve with finer weather. It is not unusual for the first bloom to be like those you sent, and the double white is very liable to this defect. The opening badly is due to the same cause; finer weather is needed.

Carnations in a Bed (*Idem*).—Stir the soil around them lightly, and add some fresh, light rich compost. They will no doubt flower finely in the bed this summer if not injured by the frost of the past winter. Make layers when the proper time arrives, and in that way prepare material for a fresh bed.

Pits for Cucumbers and Melons (*A Subscriber*).—We would have the pits 6 feet wide inside, and with two hot-water pipes along the front for top heat, and two under the bed for bottom heat. The pits need not be more than 3 feet deep at back, and 1 foot 6 inches deep in front. The length will of course depend on your requirements. The pits intended for Cucumbers should be separated from that proposed to be used for Melons; indeed for successional crops, lengths of three or more lights will need to have a division of bricks, so that the requirements of the plants in their several stages of growth may be secured. If you do not intend to use hot water for heating, but stable dung, then you will need an excavation 2 feet 6 inches deep, and have the walls of the pit 4½ inches thick, built pigeon-hole fashion, 3 feet high in front, and 3 feet 6 inches at back, and then to the top solid. The front wall may be 4 feet 6 inches, and the back 6 feet 6 inches high, calculating from the foundation. Along the back and front you will need an opening of 2 feet for hot dung for linings, and that will necessitate an outer wall 9 inches thick; it should be brought up to the ground level, and should have a course of brick-on-edge laid in cement. We have two-light frames 7 feet 6 inches long, three-light ones 11 feet 6 inches long, and they are 6 feet 6 inches wide, 1 foot 3 inches high in the front, and 2 feet 2 inches at the back, all external measurements.

Plants for a Corner Border (*H. H.*).—The plants you name are not too large for the position. The Ricinus sanguineus and Canna indica coccinea should be sown at once in a hotbed of 70° to 75°, and the young plants should be potted when large enough to handle, be grown in the hotbed until the end of May, and then be hardened off. The Cineraria maritima should also be sown at once in the hotbed, and the growth of the young plants encouraged, pricking them off about an inch apart in pans, and hardening off in May. You could not by sowing in the open ground in May raise any of them so as to be of use this season; besides, the two former are not hardy.

Bedding Plants Going-off in a Cold Frame (*Somerset*).—Judging from the plant stalks sent we should say your Geraniums have been destroyed by the cold of the past winter. That they have been wintered successfully in a cold frame in mild winters no one can doubt, but it is only with extra means of protection that they can be brought safely through winters like the past. We would, as you propose, make up a slight hotbed, which will start those that have any vitality, and the bed will answer for cuttings and for seeds of annuals, and may, after April, be used for Melons. The plant of which you enclosed a leaf and flower is Berberis japonica.

Plants from New Zealand (*W. D.*).—The Sophora tetraptera, we should think, would succeed in a sheltered situation in Guernsey. Pittosporum crassifolium would succeed in a warm situation, and undoubtedly against a wall; indeed we should plant them against a wall in the first instance, and afford a slight protection in winter. You could try others afterwards in the open ground. Coprosma grandiflora also plant against a wall, and to propagate it take cuttings of the ripened shoots, and insert them in sandy peat and loam, in a cold frame or pit, and cover them with a hand or bell-glass.

Tricolor and Bronze Pelargoniums (*Inquirer*).—No leaves were enclosed in your letter. *Six Tricolor Pelargoniums* at 1*s.* to 2*s.* 6*d.* each are—Lady Cullum, Mrs. Pollock, Picturata, Italia Unita, Sophia Dumaresque, and Lucy Grieve. *Six Bronze:* Egyptian Queen, Her Majesty, Beauty of Oulton, Edward George Henderson, Firebrand, and Model. For heating a pit 6 feet long and 6 feet wide, no mode would equal gas if you could command it, or failing that, a small stove, in both cases employing hot-water pipes. You could not well use a flue, as there would be a danger of the wood taking fire.

Names of Fruits *North-east Lincolnshire*).—1, Reinette du Canada; 2, Selwood's Reinette; 3, Winter Red Calville; 5, Sturmer Pippin; 7, Hollandbury; 8, Cornish Gilliflower; 9, Beauty of Kent; 10, Bess Pool; 14, Surrey Flat Cap; 15, White Nonpareil; 16, Baddow Pippin; 17, Wormsley Pippin; 18, Striped Holland Pippin. (*W. W.*).—1, King of the Pippins; 2, Broompark; 3, Messire Jean.

Names of Plants (*J. H. P.*).—We cannot name plants except from fresh flowers. (*L. Saunders*).—Your plant is Oxalis versicolor, a garden favourite of olden times; native of the Cape of Good Hope. (*T. A.*).—Santolina pectinata, one of the Lavender-Cottons. (*J. C.*).—1, Nephrodium Sieboldii; 2, Asplenium cicutarium; 3, A. auritum; 4, Phlebodium aureum; 5, Selaginella Martensii; 6, S. Braunii, usually called S. pubescens; 7, S. Kraussiana; 8, Pteris tremula; 9, Lastrea decomposita (*A. J. Hogg*).—Azalea amœna. (*John Cook*).—Clematis cirrhosa; propagate it by layering, or take cuttings of short stiff side shoots. The Magnolia would probably be most readily propagated by layers, but cuttings may also be tried. (*William*).—1, Omphalodes verna; 2, Onychium japonicum; 3, Adiantum diaphanum. (*J. Scott*).—1, Aspidium coriaceum; 2, Pteris arguta. (*Amateur*).—1, Thunbergia Harrisii; 2, Dædalacanthus nervosus. (*W. Parkinson*).—Not quite capable of identification without flowers. Its leaves have very much the appearance of those of Hoya obtusifolia.

POULTRY, BEE, AND PIGEON CHRONICLE.

THE GAME FOWLS OF NANTWICH.

I think from "Spectator's" remarks in No. 517 of our Journal that he cannot be cognisant of the fact that Nantwich is, and for a number of years has been, the home of the Game fowl, as, long before poultry shows were thought of, higher prices were obtained for Nantwich Game fowls than any other birds have since realised, the time of the Cochin mania excluded. Far more and better Game fowls have been bred in this locality than in any other district in England; and the annual show attracts more distant Game fanciers from all parts of England in search of fresh and good blood of this breed than even Birmingham. Certainly such would not be the case long if the true and carefully bred Nantwich birds were put into competition with the fashionable droop-tail, half-bred, Malay winner at numerous open shows, where he has almost improved the true Game fowl out of the pens. Whilst Dorking has a show of the most useful fowl to the exclusion of the coarse Shanghae or so-called Brahma, Cochin, &c., I hope "Spectator" will not try to prevent Nantwich from keeping intact the most ornamental and useful fowl combined which we have.—Cornish Duckwing.

OUTRAGES ON EXHIBITED BIRDS.

On the 4th inst. my pen of Light Brahmas and a pair of Nun Pigeons returned from the Colchester Show. I at once examined the hampers to see if any prize or commended cards were sent, but to my great annoyance the first thing that caught my eye was that the hen Nun had the hood entirely cut off, evidently by a pair of scissors, and very neatly too. Upon opening the fowl basket I was further alarmed by seeing blood upon the straw, and I found in the right side of the pullet two wounds 3 inches in length and three-quarters of an inch in depth, evidently done by a very sharp instrument, as the feathers were cut through in a line with the wounds. I am happy to inform the aggressor that I think the pullet will recover. I will promise him he will not have the chance again as long as she remains my property, as I have come to the conclusion never to exhibit again unless I can see clearly how exhibitors' property can be better protected. If these practices are to continue, no doubt a great number of other exhibitors will keep their pets at home instead of placing them at the mercy of evil-disposed persons.—T. A. Dean, *Moreton-on-Lugg, near Hereford.*

[In our advertising columns it will be seen that Mr. Dean offers a reward for the discovery of the perpetrator of this dastardly outrage. —Eds.]

What can be done to prevent these diabolical and mean acts? I am persuaded that the following was wilfully committed. On the return of my pair of Spanish birds from Colchester Show last week, where they had just won the first prize, I discovered, much to my grief and disgust, that the cock had lost one of his sickle feathers. On making a closer inspection I found that there was not another feather injured or missing, but there was the hole clear and distinct from which it had been extracted. One can understand a feather being broken and the stump left in the flesh, or a number being pulled out through the carelessness or the bad handling of those packing the birds; but when it is only one, and that clean pulled out, it seems more than an accident, and looks like the act of some malicious vagabond, who, when caught, should be prosecuted with the utmost rigour. —F. C. Nichols, *Camberwell.*

NORTHAMPTON POULTRY SHOW.

It would be impossible to speak more highly than deserved of the efforts of the Managing Committee of this Show, and a more fitting building than the Corn Exchange, where it was held, is very rarely met with. A very liberal prize schedule brought thrice the entries of last year, and few of the pens contained birds of inferior quality, and there was not a diseased bird to be met with. The company on the opening day, March 8th, was good, and numbers of the neighbouring aristocracy were present. The next day, however, being very unfavourable, limited the attendance chiefly to enthusiastic poultry amateurs, but in the evening the Exchange was well filled.

The Grey *Dorkings* were throughout very good, the hens being of unusual merit, and most of the pairs very well matched, both as to size and colour. *Cochins* rarely show to the greatest advantage so late in the season, and a few pens were evidently overtaxed by almost continuous exhibition. There were some good *Brahmas*, the Dark-feathered being the better of the two varieties. *Spanish* were mostly of excellent quality, but many of the cocks were sadly injured by their proximity to the Game fowls. By a complete oversight the pens, wired both back and front, were placed so as to touch each other, or nearly so, when set back to back, and the consequence was the Game

cocks were constantly fighting the Spanish fowls, to the permanent injury of the ear-lobes of the latter, which are a feature on which so much depends in the exhibition of Spanish fowls. It must be remembered that in an exhibition no open wirework should be fixed nearer any other pen than 9 or 10 inches, otherwise fighting will ensue. The *Game* classes were well filled, but some of the birds were much injured by the inmates of neighbouring pens. The *Hamburghs* were far in advance of those shown last year at Northampton, and constituted a very pleasing feature of the Show. The Variety class, both for cocks and hens, was first-rate, Silver Polands taking the head prize in both classes. Many of the Game *Bantams* were out of feather, and not so perfect as doubtless they had been at an earlier date. In the "Game Bantam class for any colour," decidedly the best pen in the class became the most notorious of any pair of fowls in the Show, being disqualified from the cock's saddle feathers being dyed a brilliant deep yellow. Mr. Hewitt, who judged the poultry, at once detected the deception, and having called the special attention of his colleague, the Judge of the Pigeons, to the bird, it was taken from its pen and the colour discharged in the presence of the Committee, as to single feathers plucked from the bird, though the task was by no means an easy one on the living fowl, lest injury might have resulted to the bird had the means adopted been persisted in. The matter was most artistically managed, and, as a draper might say, with warranted fast colours; still enough was got off to stain a fine white cloth the same hue as the bird's saddle feathers. This pen, of course, became the most noted object in the Exchange, and many were the sallies of satirical wit, suggestive that possibly the exhibitor, finding a class for "Game Bantams of any colour," considered dyeing admissible. It is a pity owners will not reflect beforehand on the disgrace and annoyance consequent on detection; but in accordance with our laid-down rule of treating all such offenders alike, it only remains to say this pen was stated to be exhibited by Mr. Richard Swift, of Southwell, Notts, and we were informed by the Judges it would certainly have taken the first prize had the cock been naturally exhibited. Mr. Swift denied that the birds were his; inquiries were instituted, and it has been discovered that the bird was exhibited by Hudson & Burnip, Epworth.

The *Ducks* were generally good, the Mandarins and Carolinas being shown in lovely colour.

Pigeons proved very good throughout, the Carriers and the Ponters being remarkably perfect, but the nesting season being so far advanced, no doubt prevented many entries being made that might have been otherwise expected.

The division of the Show devoted to *Rabbits* was well filled. The Lop-eared were well shown, as were some pens of the Himalayan and Dutch breeds. The heaviest Rabbit weighed 17 lbs. 9½ ozs. A few pens of good poultry were on view, "to be sold on the day of opening by public auction at 3 P.M.," but from some unexplained reason most of the best specimens were disposed of privately long before the time specified, to the great annoyance of some would-be purchasers.

DORKINGS.—*Cock.*—1, J. Chisman. 2, W. H. Denison. *hc*, Hon. J. Massy. *c*, R. Wood. *Hens.*—1, Rev. E. Bartrum. 2, J. Watts. *hc*, Mrs. G. Meek; J. L. Lowndes; J. Brown. *c*, W. H. Denison.

COCHIN-CHINA.—*Cock.*—1, J. Watts. 2, J. N. Beasley. *hc*, W. Masland; J. Barber. *c*, W. F. Checkley. *Hens.*—1, J. Watts. 2, W. F. Checkley. *hc*, J. H. Dawes.

BRAHMA POOTRA.—*Cock.*—1, Mrs. A. J. Dove. 2, J. Walker. *hc*, Hon. J. Massy; Rev. N. J. Ridley; C. T. Parker. *c*, W. H. Denison; J. More. *Hens.*—1, Dr. Holmes. 2, Hon. Mrs. Devereux. *hc*, Hon. J. Massy.

SPANISH.—*Cock.*—1, Nichols & Howard. 2, W. R. Bull. *hc*, J. F. Dixon; F. James. *c*, J. T. Parker; H. F. Cooper; E. Brown. *Hens.*—1, J. F. Dixon. 2, F. James. *hc*, J. T. Parker (2); H. F. Cooper.

GAME.—*Black-breasted Red.*—1, J. H. Bradwell. 2, W. E. Oakeley. *hc*, B. Cox. *Any Colour.*—1, J. H. Bradwell (Duckwing). 2, B. Cox. *c*, J. E. Palmer (Brown-breasted).

MALAY.—1, W. B. Payne. 2, J. Hinton. *Cockerel.*—1, Rev. A. G. Brooke. 2, J. S. Booth.

HAMBURGHS.—*Golden-spangled.*—1, W. Bearpark. 2, R. D. Borne. *c*, T. W. Swallow; P. Collins; B. Cox. *Silver-spangled.*—1, J. Coleman. 2, Hon. J. Massy. *Golden-pencilled.*—1, W. K. Tickner. 2, H. H. Thompson. *Silver-pencilled.*—1, W. D. Tipler. 2, J. King. *hc*, Hon. J. Massy.

BANTAMS.—*Game, Black-breasted Reds.*—1, H. C. Rogers. 2, F. James. *hc*, W. B. Jeffries; J. More. *c*, R. Swift. *Game, any colour.*—1 and 2, J. Allen (Pile and Brown Red).

BANTAMS (Any variety except Game).—1, S. & R. Ashton. 2, M. Leno (Laced). *hc*, Miss B. P. Frew. *c*, W. Silvester (Gold-laced); H. Wyman (Sebright); A. Storrar (Black); J. Watts (Japanese and Silver-laced).

ANY OTHER VARIETY.—*Cock.*—1, H. Bowker (Silver Poland). 2, J. P. Fawcett (Black Hamburgh). *hc*, Rev. N. J. Ridley (La Fleche); W. Silvester (Gold Poland); J. N. Beasley (Crève-Cœur); Mrs. J. Cross (Houdan). *c*, W. Burrows (La Fleche); S. W. Smith (Japanese Silkies); W. Dring (Crève-Cœur); W. Bearpark (Silver Poland); W. Clarke (Rumpless). *Hens.*—1, H. Bowker (Silver Poland). 2, W. Dring (Crève-Cœur). *hc*, Hon. J. Massy (Houdan); F. Ainsworth (Black Hamburghs); C. F. Copeman (Black Hamburgh). *c*, W. Silvester (Gold Poland); J. More (Silver Poland).

SELLING CLASSES.—*Cock.*—1, P. Collins (Golden-spangled Hamburgh). 2, Nichols & Howard (Spanish). 3, T. Rogers. *c*, Hon. J. Massy (Dark Brahma); W. F. Checkley (Buff Cochin-China); W. Masland (Cochin-China); J. Watts (Buff Cochin Cockerel); W. Clarke (Rumpless). *Hens.*—1, T. Rogers. 2, T. Hancock (Brown Red Game). 3, J. Brown. *c*, T. Love; B. Cox; Hon. Mrs. Devereux (Brahma); W. Nottage.

DUCKS.—*Aylesbury.*—1, Hon. J. Massy. 2, W. R. Bull. *c*, Mrs. A. J. Dove. *Rouen.*—1, W. H. Denison. 2, R. Wood. *c*, J. L. Lowndes; R. Wood. *Any other Variety.*—1 and 2, M. Leno (Mandarin and Carolina). *hc*, W. Silvester (South Carolina); J. N. Beasley (Black East Indian); S. & R. Ashton; J. Watts (Fancy); W. R. Pratt (East Indian); Lady C. Gordon (East Indian).

LOCAL PRIZES.

POULTRY (Any variety).—1, W. Nottage. 2, T. Adams.

PIGEONS (Any variety).—1, Higgins & Tassell (Ponters). 2, W. Nottage. *c*, T. Chambers (Black Carriers). *c*, Higgins & Tassell (Ponters) (2); T. Adams.

RABBITS.—1 and *c*, F. Sabbage. 2, W. Morbey. *hc*, F. Sabbage; W. Morbey; T. Adams (2).

PIGEONS.

POUTERS.—*Cock.*—1, T. Adams. 2, J. Barber. *hc*, W. Nottage. *Hen.*—1 and 2, W. Nottage.

CARRIERS.—*Cock.*—1 and Extra, J. C. Ord. 2, H. Yardley. *vhc*, H. Yardley; Higgins & Tassell. *Hen.*—1, H. Yardley. 2, J. C. Ord. *hc*, H. Yardley; J. Spence.

TUMBLERS.—1 and 2, H. Yardley. *c*, T. Adams.

JACOBINS.—1 and 2, E. Newbitt. *hc* and *c*, C. Martin.

FANTAILS.—1, H. Yardley. 2, W. H. Tomlinson. *hc*, H. Headley.

OWLS.—1, H. Yardley. 2, J. & C. Bullen.

TURBITS.—1, E. Newbitt. 2, H. Yardley.

BARBS.—1, H. Yardley. 2, J. C. Ord. *c*, H. Headley; Higgins & Tassell.

DRAGOONS.—1, A. W. Wren. 2, W. H. Mitchell. *c*, H. Yardley; J. Watts; Higgins & Tassell.

TRUMPETERS.—1, Withheld. 2, W. Masland.

ANTWERPS.—1, H. B. Wright. 2, H. Yardley. *c*, P. Collins.

ANY OTHER VARIETY.—1, W. Masland (Satinette). 2, Higgins & Tassell (Blue Priests). *hc*, H. Yardley.

SELLING CLASS.—1 and 2, W. Nottage. 3, E. Brown (Carrier). *hc*, J. Coleman (Dragoons); S. Morley (Blue Baldheads); W. Bulmer (Barb); Higgins and Tassell (Mealy Ponters). *c*, J. Barber (White Pouters); A. M. Yetts (Barbs); — Morbey (Black Barbs).

RABBITS.

LOP-EAR.—1, C. Gravil, jun. 2, A. H. Easten. *hc*, J. Priestly; J. E. Palmer; G. Johnson (2); E. Vaughan. *c*, — Arkwright; J. E. Palmer.

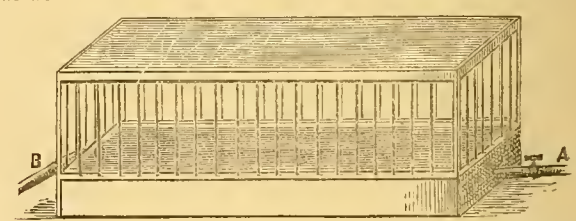
ANY OTHER PURE BREED.—1, J. Allen (Silver-Grey). 2, T. Adams. *hc*, S. G. Hudson (Silver-Grey); G. Johnson (Dutch). *c*, A. H. Easten (Silver-Grey); S. Greenwood (White Angora); J. Allen (Silver-Grey).

HEAVIEST.—1, — Arkwright (17 lbs. 9½ ozs.) 2, G. Johnson. *hc*, T. Mumby; T. Adams. *c*, A. H. Easten.

Mr. Edward Hewitt, of Birmingham, judged the *Poultry*, and Mr. Tegetmeier, of London, the *Pigeons*.

PIGEONS' WATER TROUGH.

CLEAN water being one of the principal requisites for the health of Pigeons, we must look about as to the best mode of supplying our pets with this great requirement. I have tried many plans, but have found none answer so well as the above, which I have now in use, and which I am sure all fanciers who live in towns, and can obtain a constant supply of water, would do well to use.



The drawing represents a leaden cistern 2 feet long by 9 inches wide, with a depth of 2½ inches. The upright bars, as represented, are 1½ inch apart, and prevent the birds getting into the water. The cover is removeable, so as to admit of being easily cleaned. A is the pipe which supplies the water, and which is joined to the water pipe in my dwelling-house; the water is kept continually running, and the speed can be regulated by the cock. B is the pipe which carries off the surplus water into the sewer. By these means the water is always fresh, and any dust or dirt that may get in is immediately carried down the waste pipe. Should you think the above worth a place, I shall be happy to answer any questions as to cost and other minor matters that any of your readers may wish to ask.

I may state that since using the trough described I have not had a single bird ill, my stock never being in such health and condition as at present, which I attribute to the good water supply.—FRANK GRAHAM, *Birkenhead*.

SILVER CUP FOR PARTRIDGE COCHINS AT THE WARRINGTON SHOW.—Two guineas have been granted by the Society, provided the Secretary collects enough to make the amount seven or ten guineas. Those willing to subscribe must write to Mr. C. Layland, Secretary, Morris Brook, near Warrington.

PIGEONS FROM TURKEY.—A few weeks since reference was made in our columns to a number of new and beautiful varieties of Fancy Pigeons which had been collected in the East by the late honorary secretary of the Birmingham Columbarian Society, M. Noyé, and consigned from Smyrna to his successor in that office, Mr. J. W. Ludlow, of Vauxhall Road, Birmingham. We have this week had the pleasure of inspecting a second consignment from the same quarter, which is certainly a magnificent assortment of domesticated Pigeons, and to our taste far excels in beauty the one to which we have previously alluded. It admirably illustrates the great care and high culture which is bestowed upon Pigeons in the East, where they are not only admired but regarded as sacred. To convey an adequate idea of these birds—their exquisite plumage and symmetrical proportions—by words without the aid of the pencil would simply be impossible, so intricate and marvellous is the pencilling, and so rich and varied are the colours. The collection includes Blondinettes, Blue, Satin, and Silver; Dentilettes, Capuchin, Satinettes, (variously pencilled), African Owls, Sul-

tans, Damascenes, African Turbits, and a number of others, which as yet are unnamed in this country. All are of the Owl and Turbit types, with "plain," "peaked," and round heads, "Shell Caps" and "Hoods"—in all four and twenty pairs.

In commenting upon the attractive properties and novel appearance of their predecessors we ventured to predict that the highest honours would be awarded to them at our public exhibitions, and such has proved to be the case. Many of the birds were purchased by the members of the Birmingham Columbarian Society, and have competed most successfully, as numerous prize-lists testify. They seem, in short, to have given a fresh impetus to the fancy, by encouraging the uninitiated to study and take an interest in these feathered races, as well as by reviving the latent zeal of veterans in the pursuit, whose enthusiasm most occasionally suffer a check by the wearying sameness which pervades most exhibitions. Their introduction also affords another instance of the useful work which the Birmingham Columbarian Society is doing. We congratulate them upon it, and upon the well-deserved success which is attending their exertions, and growing influence evinced by the rapid acquisition of new members from all parts of the country. —(*Midland Counties Herald.*)

UNITED KINGDOM RABBIT CLUB.

A NUMEROUSLY attended Meeting of the Rabbit fanciers of York was held in the saloon of the Lecture Hall, on March 7th, 1871; Mr. Hirst, Superintendent of the Industrial Schools, being in the chair.

Mr. M. Millington showed the desirability of forming an Association that would unite the whole of the Rabbit fanciers (without regarding the differences as to the various breeds of Rabbits), with the view of elevating the fancy, so that it may take a more respectable position in the community, and especially as regards poultry and other kindred exhibitions. Mr. Millington read many letters which he had received from the most respectable and influential men in the fancy, suggesting various modes in which the Club might be worked. Mr. Millington thought they had better not attempt too much at first, but feel their way, as they grew in experience, to greater and more attractive objects. For the present, it would be better to aim at bringing their influence to bear upon committees of poultry shows, so that the Rabbit classes should be placed upon the same level as poultry and Pigeons; to recommend to societies Rabbit classes where none had been issued before; to induce committees to have efficient gentlemen appointed as judges; to keep a register of all the Rabbit fanciers in the United Kingdom; and to cause an interest to be thrown into the fancy which it does not at present possess.

The following resolutions were then unanimously adopted:—

"1. That a Society be formed, to be called 'The United Kingdom Rabbit Club.'

"2. That the annual subscription be 2*s.* 6*d.* or upwards, payable in advance.

"3. That the head office be at York for the present year.

"4. That the following gentlemen be invited to undertake the undermentioned offices:—President, E. E. M. Royds, Rochdale; Vice-Presidents, C. Rayson, Didsbury; T. I. Inman, Hackney; J. Irving, Blackburn; J. Newman, London; S. G. Hudson, Hull; C. King, London; G. H. Hirst, York; Robert Dobson, York; Treasurer, J. Hume, York.

"5. That Mr. M. Millington be General Secretary, *pro tem.*, until the wishes of the members shall be known.

"6. That the next Meeting be held in the same room, on the first Tuesday in April, to elect the Committee and to form rules.

"7. That in the meantime the Secretary do all in his power to induce the Rabbit fanciers of the United Kingdom to join the Club."

NOTES FROM MY CANARY ROOM.—No. I.

"WHILE the earth remaineth, seedtime and harvest, and cold and heat, and summer and winter, and day and night shall not cease." There are some passages in the grand old Book, which, despite the admitted necessity for its revision, one would not like to see altered, even to the extent of the dotting of an *i* or the crossing of a *t*. Who that before he could read the Book of books, whose teachings will live through all time, preparing us for the unseen realities of eternity, turned over the leaves of some well-thumbed family Bible, and while looking at the pictorial illustrations of the events there recorded, first heard from his mother's lips the story of a world's iniquity and punishment, but connects in a way he does not know how, the return of the seasons with the Divine promise? We do not want to be told anything about the inclination of the earth's axis to the plane of its orbit, we made up our minds about that and other matters years ago; but we like to trace the result of great natural laws back to the Law-maker, and recognise in them the unmistakeable evidences of an Omnipotence without Whose knowledge not even a Sparrow falls to the ground.

This has not much to do with Canary breeding? but it has. I am not going back to antediluvian times, and attempt to prove that there were Canaries in the ark, though if I am to learn anything from the contents of "Jacky's," there must have been a spotted variety, now extinct—a kind which would not stand upright, but fell backwards, and supported itself with its tail. It is not my intention to trace the early history of the Canary, so that is not why I have opened this paper as I have.

These few sober reflections were the result of a long ramble I had in the country with a friend who, like myself, puts up a score pairs every year. Our walk is an annual institution. The first sunny Saturday in March we go hunting for moss. This walk is part and parcel of our Canary life; and when, after long months of dreary winter spent in the town, a man finds himself brought more closely face to face with Nature just rousing from its long sleep, I do not envy him his feelings if he is not led, even by so simple a form of vegetable organisation as a moss or a lichen, to look "through Nature up to Nature's God."

Our last ramble was through Ryhope Dene, a deep ravine about three miles from the town, running from the seaside about a mile inland, timbered from the margin of the little brook which struggles for existence in the watercourse at the bottom, to the top of the rugged banks on either side. A footroad led through the Dene when I was a boy, and the stream was crossed by a rustic bridge. Now, at this point, the valley is filled up from side to side with an embankment, over which long trains of coal waggons continually pass and repass, and underneath which the little stream creeps through a long culvert, emerging on the side next the sea a dirty, commonplace puddle, eventually losing itself in the sands of the shore. But the Dene is still a pretty place, and I perform a spring and summer pilgrimage thither annually. I take my children where I went with my father when I was a child. We fill our kettle from the spring on the hillside, which trickled out its sparkling drops long before I was, and will continue to do so long after I am not, and we come home laden with wild roses and honeysuckle.

On Saturday I brought home a bag of treasures for my bird room. I am just now putting up my breeding stock, and as I have promised, in compliance with the wishes of many readers of the Journal, to give a few simple, practical hints on the breeding and management of the Canary, I shall do so in a series of papers, at such intervals as will allow all who begin the season with me to compare notes as we go on. I have before written at some length upon the same subject, but as there are many who have since that time been attracted by the charms of this interesting songster, and have been induced to put up from a single pair to a score, and who may not have read what was then written, I commence the new A B C for their especial guidance.—W. A. BLAKSTON.

SUPERSTITION AMONG BEE-KEEPERS.

IT is strange how tenaciously we cling to old ideas. The teachings of early days, even the sayings of our grandfathers and grandmothers, have become as it were incorporated into our very selves. No matter if ever so superstitious, we cling to them, loth to give them up. Perhaps in nothing do we see more of this than in the common ideas respecting the nature and habits of the honey bee.

So much is this the case, that even among bee-keepers of considerable scientific culture there are still held wrong ideas, detrimental to proper management. Doubtless we have escaped from the dense fog of superstition in which Virgil wrote, when he tells us that after killing a steer it was left in the sun until

> "The tainted blood in this close prison pent,
> Begins to boil, and through the bones ferment;
> Then, wondrous to behold, new creatures rise,
> A moving mass at first, and short of thighs.
> Till shooting out with legs, and imped with wings,
> The grubs proceed to bees with pointed stings."

Yet there is much of superstition still clinging to us. Even in far more modern days the ideas so poetically expressed by Virgil were entertained in England by one who was called the "great husbandman of Cornwall, old Mr. Carew of Anthony." Here are his directions:—"Take a calf, or rather a sturk (steer) of a year old, about the latter end of April; bury it eight or ten days till it begin to putrefy and corrupt; then take it forth of the earth, and opening it, lay it under some hedge or wall, where it may be more subject to the sun, by the heat whereof it will—a great part of it—turn into maggots, which, without any other care, will live upon the remainder of the corruption. After a while, when they begin to have wings, the whole putrefied carcass should be carried to a place prepared, where the hives stand ready, to which, being perfumed with honey and sweet herbs, the maggots, after they have received their wings, will resort."—"Bees, their Habits and Treatment," by the Rev. J. G. Wood.

But we need not go back to the days of old Mr. Carew, for even in our own Canada, with all its boasted light and knowledge, and even in our immediate vicinity, not five years since, I heard an old lady remarking that "the drones are bees that have lost their stings and grown fat." There are those, too, among us, who still hold that her majesty the queen bee is a "he," and they continue to proclaim her ladyship a "king," also believing that the drones are females, and lay all the eggs. By the experienced bee-man it will be seen at once how a bee-keeper holding this long-exploded theory must fail in his management of bees. But among us there are other equally gross errors, such as that drones are required to nurse the brood; that young bees ordinarily elaborate wax, construct the comb, nurse the brood, and do all the internal work of the hive; that a certain class of bees are appointed to attend the queen, constituting the "queen's train;" that only certain bees gather honey; that young bees never gather honey till three weeks old; that another class are appointed as guard, and are relieved in regular order and at regular hours; that old bees do not build comb. These are all errors—relics of superstition, if I may so speak—and whoever adheres to them is still in the fog. —J. H. Thomas.—(*Toronto Globe.*)

Stroud Rabbit Show Schedule.—This is the very best and most impartial schedule for Rabbits yet issued by any committee. It is framed to suit both the Lop and variety fanciers, and I should advise its adoption by other committees. There is offered in all £17 10*s.*—five classes for Lops, first prize, £1; second, 10*s.*; third, 5*s.*; to the varieties four classes, prizes as above, and a special selling class for Rabbits of any variety; and, above all, the moderate entrance fee of 2*s.* 6*d.* in all classes. I understand this is the first time that prizes have been offered for Rabbits at Stroud, and I trust the entries will be so numerous that the Committee will not have to regret the money offered.—J. Boyle, Jun.

OUR LETTER BOX.

Outrage on Prize Birds (*A Lover of Poultry*).—Send us your name and address, not for publication. We cannot insert specific charges from anonymous correspondents.

Hen Egg-bound (*Wellingborough*).—Repeat the application of the sweet oil, being careful that you apply it to the egg-passage; and give the hen a table-spoonful of castor oil at the same time.

Poultry Trespassing.—"Opposite our house is some land belonging to another person; it is fenced off with rails, but there is no close fence, and, of course, my hens go into the field. I want to know if the rails constitute a fence, and if I am liable to be sued for the hens going on my neighbour's land?—J. R G."

[We think you would be liable; for even in unenclosed lands, and in adjoining grounds where there is enclosure, it has been decided the keeper of cattle must take care that they do not trespass.]

Curing Egg-eating Hens (*G. T.*).—Hens generally eat their eggs from want of lime or the material necessary for forming the shell. They eat it first for the sake of the shell, in order to form that which is in course of being produced. Nothing is so good as to throw some baskets of bricklayers' rubbish about in their haunts. It is from want of this that hens in their laying season eat the mortar from between the bricks. When they eat the shell they learn to like the yolk, and then take to the egg. There is no real cure, but if they are watched when they lay, and driven from the nest after the operation is complete, they sometimes give up the habit. Another less troublesome plan is to obtain some very hard artificial nest eggs and put them in the nests, and to lay them about their haunts. They peck at them, and finding it fruitless give up the habit.

Brahma Hens Featherless (*W. J.*).—You are perfectly right in your explanation of bare backs at the end of the summer, but we do not think it is the case in the first week of March. Closer observation will show you the attentions of the cock are much more violent in the summer than they are now, and in a well-managed yard the number should be reduced as the season becomes more advanced, and the weather warmer. Perfect breeding is from the largest possible hen, and from a moderate-sized cock possessing every desirable point. The very heavy cocks cause the lacerations you mention. We had the last week one of the best La Flèche hens we ever had torn fearfully. Judging from your description you have too many cocks, one to twelve hens will be enough now.

Chickens Dying in the Shell (*A. B.*).—The six chickens hatched in spite of you. Your eggs are too dry, and the young cannot make their way out of the shell. The eggs should be wetted every day for ten days before hatching. When they are within two days of hatching they should be put in a pail of warm water for ten minutes. Their movements will tell you which are alive, and the moistening of the shells will facilitate the exit from them.

Blue Game Cocks (*A Young Beginner*).—There are no real blue Game cocks, but some years ago there was a breed called the Blue Duns. We have seen few of them lately. They were very valuable on account of their hackles, which were much used for salmon flies for fishing. They had light blue bodies, with darker saddle and hackle. They were kept in the neighbourhood of Liverpool. We do not profess to tell the sex of an egg. Those who do, tell you the pointed eggs produce cocks, the round ones pullets. We cannot explain the cause, but our experience tells us more cocks are hatched from early than from late eggs.

Buying Chickens (*Subscriber*).—Chickens are easily distinguished from hens by the fineness of their faces, the delicacy of their legs, by the absence of wrinkles in their skins, and by the want of rotundity in their figure. Buy of some one you can believe, and do not be above asking particulars of the birds you are about to buy. You will find your question about eggs answered previously.

Various (*H. H.*).—It is not in any way injurious for fowls to run together if their eggs are not wanted and the cocks are not too numerous. There will be no security unless they are separated for a month. The houses and runs you name will answer your purpose very well for a short time. They are better adapted for four than for six fowls. No covered place is necessary or even desirable. You may safely double the number of hens if you wish it. Sitting hens should be by themselves, and protected from intrusion.

Parasites on Fowls (*I. R.*).—You may destroy the pests by putting oil at the back of the head, on the backbone, and under each wing. Supply your fowls with a heap of road grit, and mix some black brimstone with it. They will dust in it, to the discomfiture of their inhabitants.

White-necked Creals (*J. B.*).—We think if you substitute barley for wheat you will do better. You will improve more if you give a daily meal, or even two, of ground oats slaked with water. Your birds should all be double-combed. The cock should be light all over with a dark tail, each feather silvered on each side. All must have double combs and white deaf ears.

Pigeon not Paid for (*R. Key*).—We cannot insert your letter. The transaction is not clearly fraudulent.

Archangels and Turbits (*A Subscriber*).—The principal points in Archangel Pigeons are—beak pale brown, the eyes gravel or orange red, the head rather long and narrow, tail as black as you can get it, tuft pointed. As to colour, the head, neck, and breast of coppery red, very glossy, and reflecting an orange tint. In Turbits—beak, the shorter the better; the eyes large and of a dark hazel colour; head broad and somewhat angular; shoulders of one colour, the rest of the body white; gullet well developed; tuft pointed; size, the smaller the better. In Archangels we are not aware that size is a point, but we like to see them of a good size; they look best as fine birds.

METEOROLOGICAL OBSERVATIONS,

Camden, Square, London.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude 111 feet.

Date. 1871. March.	9 A.M. Barometer at 32° and Sea Level.	9 A.M. Hygrometer. Dry.	9 A.M. Hygrometer. Wet.	9 A.M. Direction of Wind.	9 A.M. Temp. of Soil at 1 ft.	In the Day. Shade Temperature. Max.	In the Day. Shade Temperature. Min.	In the Day. Radiation Temperature. In sun.	In the Day. Radiation Temperature. On grass	Rain.
	Inches.		deg.		deg.	deg.	deg.	deg.	deg.	In.
We. 8	29.899		42.4	W.	42.2	52.9	41.6	96.6	38.3	0.052
Th. 9	30.293	.0	41.3	S.W.	42.2	49.4	32.7	73.1	29.9	0.268
Fri. 10	30.105	9	41 9	S.W.	41.5	53.0	36.8	92.5	34.1	0.037
Sat. 11	30.137		49.0	S.W.	41.3	59.1	42.2	103.2	38.7	—
Sun. 12	29.838		46.5	S.W.	42.3	56.9	46.5	94.3	42.7	—
Mo. 13	29.676		44.8	W.	42.8	52.4	42.9	86.5	40.2	0.042
Tu. 14	29.876		41.3	W.	42.5	50.6	38.2	89.8	34.3	0.161
Means	29.975	46.5	43.9		42.1	53.5	40.3	90.4	36.9	0.555

REMARKS.

8th.—Rain in afternoon.

9th.—Gale from S.W. from noon to 5 P.M. with heavy rain. Lunar halo after midnight.

10th.—Fair in the morning, slight shower between 7 and 8 P.M.

11th.—Rain in very early morning, fine afternoon.

12th.—Rather dull in the morning, but beautiful afternoon.

13th.—Hailstorm at 9.10 A.M., only lasting twelve minutes.

14th.—Fine morning, sharp shower at noon, another between 3 and 4 P.M., about 5 P.M. very dark, followed by another heavy shower, colder at night.

The temperature again considerably above the average, with S.W. winds and moderate rain.—G. J. Symons.

COVENT GARDEN MARKET.—March 15.

The late improvements have been maintained, and general rates rule much as last week. Cornish produce has now largely increased, and a consequent reduction has taken place. Cucumbers have also been very abundant during the last few days.

FRUIT.

	s.	d.	s.	d		s.	d.	s.	d
Apples ½ sieve	1	6	to 3	0	Mulberries lb.	0	0	to 0	0
Apricots doz.	0	0	0	0	Nectarines doz.	0	0	0	0
Cherries lb.	0	0	0	0	Oranges ℔ 100	6	0	10	0
Chestnuts bushel	10	0	18	0	Peaches doz.	0	0	0	0
Currants ½ sieve	0	0	0	0	Pears, kitchen doz.	2	0	6	0
Black do.	0	0	0	0	dessert doz.	3	0	8	0
Figs doz.	0	0	0	0	Pine Apples lb.	6	0	10	0
Filberts lb.	0	0	2	0	Plums ½ sieve	0	0	0	0
Cobs lb.	2	0	2	6	Quinces doz.	0	0	0	0
Gooseberries quart	0	0	0	0	Raspberries lb.	0	0	0	0
Grapes, Hothouse lb.	6	0	12	0	Strawberries oz.	3	0	5	0
Lemons ℔ 100	6	0	10	0	Walnuts bushel	10	0	16	0
Melons each	10	0	15	0	do. ℔ 100	1	0	2	0

VEGETABLES.

	s.	d.	s.	d		s.	d.	s.	d
Artichokes doz.	0	0	to 0	0	Leeks bunch	0	4	to 0	0
Asparagus ℔ 100	7	0	10	0	Lettuce doz.	1	0	2	0
Beans, Kidney ℔ 100	2	0	3	0	Mushrooms pottle	1	0	2	6
Broad bushel	0	0	0	0	Mustard & Cress punnet	0	2	0	0
Beet, Red doz.	2	0	3	0	Onions bushel	4	0	7	0
Broccoli bundle	0	3	1	6	pickling quart	0	4	0	0
Brussels Sprouts ½ sieve	3	0	4	0	Parsley sieve	3	0	6	0
Cabbage doz.	1	0	2	0	Parsnips doz.	0	3	1	0
Capsicums ℔ 100	0	0	0	0	Peas quart	0	0	0	0
Carrots bunch	0	4	0	8	Potatoes bushel	2	0	4	0
Cauliflower doz.	2	0	5	0	Kidney do.	3	0	4	0
Celery bundle	1	6	2	0	Radishes doz. bunches	0	6	1	0
Coleworts doz. bunches	3	0	6	0	Rhubarb bundle	0	9	1	6
Cucumbers each	0	9	2	0	Savoys doz.	1	8	2	0
picking doz.	0	0	0	0	Sea-kale basket	2	0	3	0
Endive doz.	2	0	0	0	Shallots lb.	0	6	0	0
Fennel bunch	0	3	0	0	Spinach bushel	3	0	5	0
Garlic lb.	0	3	0	0	Tomatoes doz.	0	0	0	6
Herbs bunch	0	3	0	0	Turnips bunch	0	6	0	0
Horseradish bundle	3	0	5	0	Vegetable Marrows doz.	0	0	0	0

WEEKLY CALENDAR.

Day of Month	Day of Week.	MARCH 23—29, 1871.	Average Temperature near London. Day.	Night.	Mean.	Rain in 43 years. Days.	Sun Rises. m. h.	Sun Sets. m. h.	Moon Rises. m. h.	Moon Sets. m. h.	Moon's Age. Days.	Clock before Sun. m. s.	Day of Year.
23	Th	Meeting of Royal Society, 8.30 P.M.	50.7	33.1	41.9	18	59 af 5	15 af 6	18 af 7	49 af 8	2	6 46	82
24	F		48.7	31.7	40.2	16	57 5	17 6	36 7	58 9	3	6 28	83
25	S	Lady Day.	50.9	32.8	41.9	16	54 5	18 6	55 7	5 11	4	6 9	84
26	Sun	5 Sunday in Lent.	51.8	32.6	42.2	16	52 6	20 6	20 8	morn.	5	5 51	85
27	M	Meeting of Royal Geographical Society,	54.1	34.1	44.1	14	50 5	22 6	48 8	11 0	6	5 32	86
28	Tu	[8.30 P.M.	53.0	34.0	43.5	17	48 5	24 6	23 9	13 1	7	5 14	87
29	W	Meeting of Society of Arts, 8 P.M.	53.7	33.4	43.6	13	45 5	26 6	8 10	11 2	☽	4 55	88

From observations taken near London during forty-three years, the average day temperature of the week is 51.8°, and its night temperature 33.1°. The greatest heat was 75°, on the 27th, 1830; and the lowest cold 14°, on the 25th, 1850. The greatest fall of rain was 0.68 inch.

SUMMER CUCUMBER GROWING.

APART from those gardens possessing houses or pits specially adapted for the growth of Cucumbers, there are others, and by far the greater number, where such conveniences do not exist; still Cucumbers are there required to be produced for as long a period as possible with the ordinary means at hand. Where frames and fermenting materials are forthcoming a goodly quantity of Cucumbers can be grown, but where there is a pit or an ordinary small house commanding a little warmth, a very plentiful supply can easily be produced; and to explain my method I cannot do better than describe a structure in which I have succeeded in producing abundant crops of Cucumbers by very simple means.

The house, a lean-to, 30 feet in length, by 9 feet 6 inches wide, is heated by a flue, resting on the ground, running along the front, and returning at about 3 feet from the back wall. There are two tables composed of oak planks, 3 feet wide, extending the length of the house, and divided by a narrow walk of 18 inches in width, and there is a 2-feet walk at the back. On the table nearest to the back the Cucumbers were planted, whilst the front table, as well as the space at liberty on the back one, was filled during the early part of the season with stove plants grown for furnishing and dinner-table decoration. From the back wall to half the width of the house, a wire trellis is fixed at about a foot from the glass.

In the first week in February the seeds of Masters's Prolific Cucumber, an excellent variety, were sown singly in 2-inch pots, and placed in a warm position at the end of the house where the flue entered. As the young plants came up and showed rough leaves, they were placed close to the glass, and grown very steadily. They were shifted when necessary into 6-inch pots, taking care that the pots were thoroughly drained, and replaced close to the glass. As soon as they were rooting freely to the sides of the pots they were placed in large Sea-kale pots, taking care not to bury the stem deeply in the soil. They were then placed on the table at 2 feet 6 inches apart, and allowed to grow very steadily so as to become sturdy, and were trained to the trellis, which is just 3 feet from the table. They were allowed to grow until within 18 inches of the back wall, when the small point of the shoot was nipped out, after which the fruit was soon produced. The plants were always stopped at the first leaf after the fruit, as soon as the point of the shoot could be laid hold of by the finger and thumb.

In the first week of April other Cucumber seeds were sown, the kinds being Hamilton's Market Favourite and Telegraph, both of which are first-rate Cucumbers. The plants were grown exactly as the former ones until they were turned out of the 32-sized or 6-inch pots. Then, on the table and between the pots containing the plants being forced, some rough sods of peat or fresh-cut turf, with a little rough charcoal, were placed, to the depth of 4 or 5 inches, over a space about 15 inches square; on this was put more loam, the plants were turned out of their pots, and placed on this soil, and the ball of roots just covered with soil. As the roots gradually work to the outside of the mound more soil is added, always using rough sods and charcoal upon the table. The soil for the additional earthings, which must always be warmed, should be as rough as possible and without manure; and merely add about 2 inches in thickness at a time at the outsides of the mounds only, as the surface of the bed is not raised above the original height, which is about 1 foot from the table. By this method the plants do not rush into rampant growth at first, and when fruited quickly do not decline, as I have frequently seen them do, but the growth from first to last is sturdy and short-jointed; the additions of soil given them keeping the strength and fruiting powers of the plants in due proportion to the number of Cucumbers produced.

As the plants of the second sowing require space on the trellis, those in the pots are reduced, and ultimately removed, after having yielded a heavy crop of Cucumbers, every fruit that showed being taken from them. As the pots are removed, earthing is continued until the mounds join and form one continuous bed about 2 feet 6 inches wide and 1 foot in depth, after which time very slight top-dressings of sheep or deer dung, mixed with the loam, are given, and occasional waterings of liquid manure. I have had Cucumber plants continually fruiting in abundance for six months, although each plant throughout the season only received a barrowful of soil to grow in.

The heat required for the young plants whilst in the 6-inch pots is 60° at night; and when planted out, and throughout their fruiting, 65° at night will be sufficient; in fact, with the long bright days of summer, the temperature may be suffered to decline a few degrees below this at night, rather than use fire heat, provided the plants are not subjected to a continued depression of temperature. A slight amount of air should always be admitted, especially when fire heat is used, and be careful to introduce fresh air as early as possible in the morning, allowing the temperature to rise, but gradually, to from 85° to 90° whilst the sun strikes fully on the house. Keep the atmosphere always moist by continued dampings, but only syringe the plants once a-day, shutting up and syringing very early in the afternoon, in fact as soon as the sun ceases to shine fully on the house or pit. This syringing should consist not of a slight damping only, but be a judicious saturation of everything within the house.—T. C. Sage.

CALCEOLARIAS FLOWERING LATE.

I do not think it necessary to make any practical remarks about taking off and putting in the cuttings, and their treatment during the autumn and winter months, as Mr. Eames, at page 179, has already given my practice during that time, with the exception that I put a little sand on the surface of the cutting bed.

About the end of March I prepare a trench 3 feet wide, and put 3 inches of dung along the bottom; I then mix with it about 4 inches of the soil. I lift the young plants

with great care, and plant them in the trench at about 5 inches apart. After having put in a number, I give them a good watering, and so proceed till the trench is filled. They remain until the 20th of May, and I have known it later. I never allow them at any time to become the least dry in the trench. Very often they show flower on some of the shoots; these I pinch off. I pinch all the shoots, once in the cutting bed and once in the trench.

When I remove the plants to the flower garden, after planting I give as much water as I think will saturate the ball, in order to prevent flagging, which is almost certain to follow if no water be given. In a short time they begin to show some more flowers, these I pinch off; no more pinching after that, but whenever I observe the surface of the soil becoming dry I have them watered. In very hot weather I often in the afternoons just damp them over with the waterpot and rose; they seem to like it, and they well repay me for the trouble. They continue flowering till the end of September, and if the weather at the beginning of October were not quite so wet and stormy they would look well later than that. Last year Mr. Eames's favourite Kayii, at the end of September, was as finely flowered as it was in August. For the last ten years I have never failed to have a good show of Calceolarias; I have never had disease among them. Any plants that I lose after planting out are lost through accidents. I do not suppose out of a thousand plants I lose thirty, and these I make good again from a reserve stock kept for that purpose.

I do not believe that coddling, as it is called, has anything to do with the disease, as I have treated a few in that way once, but after I took them in hand I allowed them to receive no check, and they succeeded just as well as the others that were not coddled. I remember that about sixteen years ago, when the greenhouse varieties took the disease, the man who used to grow some fine specimens before that time, afterwards entirely failed to procure anything like a specimen, and with just the same treatment that they gave to the fine plants they used to have. I do not think the secret of the disease is yet found out.—James Smith, *Fynone*.

THE SEXES OF FIGS.

Some time ago I heard of an Englishman at Smyrna, who, on leaving home one morning, ordered that a large barren Fig tree which stood in his garden should be cut down. On returning he found the Kadhi and a large concourse of people round his house, and was told by the Kadhi that the tree must not be cut down, as it was a male one, and fertilised all the trees around. This story recalled to my mind a communication made some years ago to the *Gardeners' Chroniele*, by M. Lennep, Dutch Consul at Smyrna, wherein he stated that the Aideen Fig, which produces the dried fruit of commerce, and also the Cassobar, were dicœcious, while the Bardadgik is monœcious. On the latter male flowers grow on the younger branches, and female on the older. When the tree becomes aged no more male flowers are produced. The male flowers open twenty or thirty days before the female. Wild plants are said to produce no female blossoms until they are cultivated.

Now, all this agrees with what Tournefort and all eastern travellers assert as to the necessity of caprification. In England this practice is thought unnecessary, and it is maintained that near the eye of the common receptacle, which we call the fruit, there are a few male flowers which fertilise the females lying below them. I ask, then, have no dicœcious varieties ever been introduced into England, or is the casting of fruit, of which we have heard so much, sometimes owing to want of proper fertilisation? Or is the habit of the plant modified by our climate and culture? It is to be remarked that the genus Ficus is mostly dicœcious.

In order to get some further information on this subject, I wrote to a relative, now of Naples, but formerly of Smyrna, and the subjoined extract from the reply may probably be interesting.

After stating that both in Italy and in Smyrna wild plants are male, and describing the well-known process of caprification, the letter says—"The wild Fig here has a partiality for stones and old buildings, which it soon converts into a heap of ruins. When the cultivated or female Fig has swollen to nearly its full size, they take a pointed stick like a toothpick, dip it in olive oil, and prick the Fig in the eye. This operation is performed on every fruit. Some say they are better flavoured without this operation, but I approve of it, for the unassisted Figs ripen later and become insipid from the rain which then falls. The variety most liked here resembles that most esteemed in Smyrna, and probably came from the same country, as its name is Trojano. Its pulp is very light, and large quantities can be eaten without indigestion. But these Figs are impatient of climate. In rainy weather they are watery, in dry weather they fall off immature. (Large Brown Ischia of Miller?)"

"The only advantage which Smyrna has over Italy in the way of fruit, is in the Melons of Cassobar. There is also a village not far off which produces a honey far superior to the classic Hymettus. It is perfectly white, resembling an ice-cream, for which I took it the first time I saw it."—G. S.

MISCELLANEOUS NOTES.

"Variety's the source of joy below,
From which still fresh revolving pleasures flow."

I have several times wished to make a few remarks on current topics in The Journal of Horticulture, but have been so fully occupied, that I have not found time, but I send a few short notes.

I feel nearly confident that Verbena disease, where it exists, is generally from too cold or too damp treatment. Verbenas require light and air and warmth in the winter months, with moisture. A shelf in a medium-temperatured stove close to the light is as good a place in which to winter Verbenas as can be found. Spring-struck cuttings make better plants for bedding than any that have been kept over the winter, and it is better to have good-sized stock plants established in pots by early striking, than to wait for autumn to strike for winter. One good well-established plant in a 7-inch pot kept warm on a shelf, will produce more cuttings in spring than half a dozen store pots of cuttings, even if there are six or seven cuttings in a pot.

A cold treatment of bedding plants is advocated on two accounts—one on account of economy, the other on the score of hardening the plants. I question both these points. Hundreds and hundreds of Geraniums have been lost this winter by keeping them in cold pits, when a little fire heat would have saved the value of the plants. 2ndly. Plants are not hardened by the bare keeping-alive process; on the contrary, it takes weeks and months for them to recover. Geraniums, Verbenas, Ageratums, &c., are not deciduous shrubs, and cannot but suffer both root and branch from being kept damp and cold, and shut up in brick pits covered over with boards and straw, &c.

With fruit trees (to touch upon another point where there seem differences of opinion) it is different; being deciduous they can stand the winter out of doors in pots, provided the roots are covered, and not exposed to the action of frost. I have just brought in some fruit trees—Peaches, Nectarines, and Plums—which had been plunged in a sheltered corner of the kitchen garden, and within ten days they were a sheet of beautiful bloom, and seem likely to set well.

I quite agree with Mr. Kingsley, that the rule with all hot-water boilers should be, never to use anything but soft water. It is very easy to have a water-butt to catch water from the nearest building, and to have a self-feeding cistern regulated by a ball-cock to supply the boilers, so as to keep a steady supply without requiring attention.

It is a common error to suppose that it indicates a rapid circulation in a boiler for the return-pipe to be much colder than the flow. This is a fallacy, because the easier the circulation, the quicker will the water return, and if the return-pipe is cold and yet the flow quick, it must require the furnace to be kept at an extreme heat for that difference to be obtained in the temperature of the water during its passage through the boiler. Whenever there is a very marked difference in the temperature between the flow and return, it is a sure sign that the boiler is overworked—*i.e.*, there is too much area of piping, or else that it is badly set or inefficient, and there cannot be a worse sign for a boiler for night purposes, than to find the average difference between the flow and return is great, because as soon as the fire begins to slacken the pipes would cool down rapidly. Another common error, is to see 2-inch pipes, and even less, used for the junctions into the boiler both flow and return. It ought to be borne in mind that four times as much water could be run through a 4-inch pipe in a given time than through a 2-inch pipe, and there is no greater check for the circulation than this sudden change from a 4 to a 2-inch return-pipe, as the whole circulation of the water depends merely on the difference of weight between heated and superheated water.

A word as to laps in glazing. Last spring I built a double

span house with the glass slipping up in grooves without laps, and without putty. I have had no breakage from frost, and no drip. I took into the house an architect, who was incredulous on the subject, when it was raining fast with gusts of wind, and he could find no drip. If the slope is too flat, there will be, but if it is anything over 1 in 3, then any water which finds its way between the butted joints runs down inside, and the lower pane ought always to be free from the woodwork at the bottom, a space of one-quarter to half an inch being left for air. This adds also to the health of plants in the house, by causing a constant circulation of air. Breakage is caused from the laps being too wide, not from the glass being wide. The wider the glass the more play it has, and it bends without breaking. I have had no breakage from frost in panes set 20 inches wide, even though their glass is only fourths, which Mr. Pearson condemns. I would never use glass less than 21 oz.

I have had a very practical proof this winter of the little frames described by Mr. Luckhurst. Cauliflower plants pricked out under them have never been in the least injured by frost, while Cabbage plants sown at the same time alongside, and not pricked out but left in the seed bed after thinning, are severely injured. The frames, glass included, only cost 8s. a-piece, 10 feet long, 2 feet wide. I have had over a bed of Violets another frame, which has answered thoroughly. Some earthenware seed pans sent me by Mr. Looker, on trial, with glass over them, have also effectually kept some cuttings of Calceolarias in the open ground with very little other protection, and I think they would be very valuable for small gardens. I still, however, prefer wooden frames with moveable glass, as the frames can be moved from one place to another without displacing the glass, and there is not the liability to breakage.

Can any of your readers inform me how many spikes of bloom a Medinilla magnifica now in its third year, in a 10-inch pot, can carry with liberal treatment? Every shoot on the plant has shown flower-buds. I counted thirty-eight on it. I have removed several, but many are now showing their racemes of flower, and I hardly know how many it is safe to leave. I have been trying the Darwinian theory of natural selection, thinking the weakest would go to the wall, but it seems to me as if too many are staying on.

I can strongly recommend Thunbergia Harrisii for winter blooming in the stove, and Linum trigynum for the greenhouse. The latter began to open its blooms with me in October, and the last are only just over now. Thunbergia Harrisii has been in bloom for three months, and I have had as many as twenty-eight fully expanded blooms at once. It has more buds on it now than ever, and it seems to me to be likely to be in bloom for two months more. Those of your readers who may not know it can best picture it to themselves by the flowers of Gloxinia Madame Schmidt, but the flowers are larger than any Gloxinia I have ever seen, of a soft pale blue, with a white throat, the blue something of the colour of Plumbago capensis. It is striking even when only four or five blooms are expanded, but when from twenty to thirty are open at once, it is one of the prettiest stove climbers I know. My plant is about 3 feet 6 inches high, and 18 to 20 inches through, and is only a little more than a year old.

I wish Mr. Pearson would give us another chapter or two on horticultural fallacies; there are plenty which are being perpetuated, and many prejudices to be overcome—as, for instance, syringing spoiling the bloom of Grapes; damp may do so in a cold house, but I syringed some bunches of Alicante hard with a hydronette every day for weeks, and never saw bunches with finer bloom; and some Prince of Wales Peach trees in a pot having become dusty, I syringed them as hard as I could for two or three days, when they were nearly ripe, without ever injuring the bloom. Many persons allow their Peaches and Nectarines to be infested with red spider, fearing lest the use of the syringe when the fruit is ripening, should injure the bloom. If only pure soft water is used no harm will be done.—C. P. Peach.

RAISING AND PLANTING-OUT SUCCESSFULLY EARLY PEAS.

The article at page 157 gave me great pleasure, as I have had my early Peas more or less injured for several seasons by rats, mice, pheasants, pigeons, or the inclemency of the weather. This season I have, so far, surmounted these difficulties by adopting a similar method to that recommended by Mr. Mackellar, differing only in a few minor points, which may be of use to some who cannot procure boxes.

On the 13th of January I had a lot of tough slightly decayed sods cut about 2½ feet in length and 6 inches in width, and placed closely together on a vinery border where the temperature was about 65°. After having a sufficient quantity conveyed to the vinery, I had the inverted turves raked with a sharp-toothed rake to loosen and prepare the surface for the seed. After the Peas were sown on the turf, I had the whole covered with suitable soil and lightly pressed with a spade. In about ten days the young Peas were through the soil, and when about 2 inches high (January 30th), I had them removed to a turf pit, where they were kept close for a few days, and then gradually inured to the cold. On the 15th of February I had them planted on a well-prepared south border, and staked, at the same time having a few twigs of Silver Fir outside the stakes to protect the Peas. They now seem quite out of danger, and are looking remarkably well. The variety is Dickson's First and Best. I think where narrow boards can be procured, they are preferable to boxes.—W. Osborne, *Fota Island, Co. Cork.*

A FLORIST'S NOTES AT SOUTH KENSINGTON.

March 15th.

No such show of Hyacinths as we have been accustomed to see; the Society's prizes were not so liberal as in former years, and the Dutch growers had not offered any this season, so, as a necessary consequence, the display was by no means so great, and had it not been for the very extensive collection beautifully staged by Mr. William Paul, would have been very small indeed. But the quality was admirable; it was something to see Mr. Cutbush, who has won his laurels so very often, thoroughly and well beaten by a new competitor, Messrs. Veitch & Sons, of Chelsea. Anything finer or more beautifully finished than their group of eighteen I have never seen. Garibaldi was magnificent, as were also La Grande Resemblance, Koh-i-Noor, and Grand Lilas. Messrs. Cutbush had a beautifully-grown group, but certainly not equal to the preceding. Macaulay was the finest specimen I have ever seen of this variety, so apt often to throw its head on one side; but this was exceptionally grand. The class for eighteen white Hyacinths failed, as I thought it would; in both collections were flowers which were certainly not white, while I believe it would have been impossible to have shown the difference between some of the varieties, so exactly alike were they. Of new varieties there was nothing to my mind at all worthy of notice, though several of them received first-class certificates; why, I cannot say. It seems to be somewhat absurd to "decorate" flowers which are inferior to those already in cultivation, and which, moreover, pass away from notice for many long years to come. My friend, Mr. Douglas, came forward as an exhibitor of Hyacinths, and took the place he invariably does when he essays anything, carrying off the first prize. I had thought of competing, but the trouble of bringing the plants up to London would have been so great, that I abandoned it, and I certainly should have been beaten.

I believe I have already somewhere mentioned Marquise de Castellane as one of the best Hybrid Perpetuals of last year; any doubt as to the correctness of such an opinion would have been dissipated by the sight of a beautiful set of plants of it exhibited by Mr. H. Bennett, Manor Farm Nursery, Salisbury. I should, probably, best describe it as a pink Baronne de Rothschild, a little fuller than that variety. It is very free flowering, and of a capital constitution. It was amusing to see growers asking one another how their stocks of it were, so much did it strike every one as a variety of sterling merit.

It can hardly be said that the Amaryllis is a florists' flower, yet it was as a florist that I regarded a fine seedling exhibited by Messrs. Veitch & Sons. It is called Chelsoni, a most brilliant crimson, shaded with scarlet, and with petals of the very finest form and substance. It received deservedly a first-class certificate.—D., *Deal.*

Messrs. Cutbush's Show of Spring-flowering Plants.—We have again to direct attention to one of those pretty exhibitions of spring-flowering plants with which Messrs. Cutbush annually gratify the visitors to the Crystal Palace. This year the arrangement is different from that of previous years, less formal, and more pleasing. The Hyacinths and Tulips, which are the leading feature, are interspersed among plants of suitable height, the whole forming a sloping bank on both sides of the middle of the tables, of which there are two, each 50 feet long, with a circle between them, making a neat centre. The middle of the oblong stages is occupied with a row of pyramidal Ivies, Azaleas, and taller-growing subjects, and the interval between these and the front is filled up with Epacrises, Spiræa japonica,

Deutzias, Gueldres Roses, Ferns, and a great variety of other subjects. The centre is appropriately crowned with a Dicksonia in an elevated vase, and rising to this from the front are circular bands of Ferns, Hyacinths, Tulips, Spiræa japonica, Narcissus, and erect-growing Arbor-Vitæ. The exhibition commenced on Saturday last, and will be continued till the 1st of next month.

ROYAL BOTANIC SOCIETY'S SPRING SHOW.

The first spring Show of this Society commenced yesterday, and will be continued to-day. As before, it is held in the same long narrow tent under the lee of the conservatory, and the Roses, Hyacinths, Tulips, and Cyclamens which constitute the larger part of the display, present a very gay appearance. There are, besides, forced shrubs, greenhouse plants, and miscellaneous collections giving considerable variety; and the Conservatory, in which the Orchids and some other subjects of exhibition are placed, lends no inefficient aid, as it is more than usually well furnished with flowering plants. It may here be remarked, that the new wing of this building, long contemplated, is now completed.

In Hyacinths, Messrs. Veitch, of Chelsea, had no competitors; after their recent triumphal *début* at Kensington no one was willing to enter the lists against them, and, as a matter of course, they carried off the first prize with splendid examples of Vanrbaak, General Havelock, Alba Maxima, Ida, King of the Blues, Leviathan, Haydn, Lord Byron, Macaulay, La Grandesse, Feruck Khan, and Garibaldi. They send in addition a very fine collection, for which an extra prize was awarded. In the amateurs' class the prizes went to Mr. Weir, gardener to Mrs. Hodgson, Hampstead, Mr. Douglas, gardener to F. Whithourn, Esq., and Mr. Stephenson, Bow, all of whom have for the most part good spikes. The schedule stated simply "12 Hyacinths," without stipulating that these should be of distinct varieties. The first-prize twelve contained two Charles Dickens S.B., and the third-prize twelve four Grandeur à Merveille, two Charles Dickens, and two Gigantea. Surely such cannot be the intention of the schedule, whatever the letter of it may be, but by the letter of the schedule the Judges had to award the prizes. It would be well in future years to add "distinct sorts," otherwise some one may exhibit twelve pots of one kind. Only two new Hyacinths are shown, both named Princess Louise, one being a single white from Messrs. Veitch, the other a double red from Mr. William Paul. Each had a first-class certificate. Mr. William Paul also exhibits, not for competition, a very extensive and fine collection of Hyacinths, Tulips, and Narcissus, for which extra prizes were awarded.

In Tulips, Messrs. Veitch are the only exhibitors in the nurserymen's class for twelve pots of four kinds, taking the first prize with Rose Applati, White Pottebakker, Cramoisie Royal, and Vermillon Brillant. In the amateurs' class the prizes go to Messrs. Searle, Weir, and Stephenson.

Cyclamens from Mr. James, gardener to W. F. Watson, Esq., Mr. Goddard, gardener to H. Little, Esq., Twickenham, and Mr. Edmonds, nurseryman, Hayes, are fine, and prizes were awarded in the order of the names, Mr. Edmonds in addition receiving first-class certificates for a large-flowered rosy-purple variety called Giganteum, and Grandiflorum, white.

Roses in pots from Messrs. Paul & Son consist of Céline Forestier, Duke of Edinburgh, Elie Morel, and Dr. Andry excellently bloomed, especially the first two. For these the first prize was awarded. Messrs. Paul & Son likewise have several new kinds, of which one called Climbing Victor Verdier, of very vigorous growth, had a first-class certificate. Roses in pots are likewise exhibited in the miscellaneous class by Messrs. Paul & Son and Messrs. Veitch; those from the latter in small pots are exceedingly beautiful.

Chinese Primulas come from Mr. Goddard and Mr. James, who each take a place in the prize list; and Mr. W. Paul was awarded a first-class certificate for his fine white variety called Waltham White. For Cinerarias Mr. James and Mr. G. Wheeler, gardener to Sir F. Goldsmid, Bart., are prizetakers; and so are Messrs. Goddard, Weir, and Searle for Lily of the Valley.

Of Deutzias Messrs. Lane, of Great Berkhampstead, have plants of D. gracilis 2 feet in diameter and the same in height, beautiful masses of blossom. For these a first prize was given, the second going to Mr. G. Wheeler; and for other forced shrubs the same exhibitors take the same relative positions, Messrs. Lane having along with Berberis Darwinii, Rhododendrons Prince Camille de Rohan and Favourite, forming fine masses of flowers though in small pots. Of Azaleas excellent specimens are shown by Messrs. Lane and G. Wheeler, and the latter also receives a first prize for twelve greenhouse plants in flower, including a well-bloomed Acacia Drummondi, and a large Eriostemon and Chorozema.

Miscellaneous collections come from Messrs. Veitch, Mr. Williams, of Holloway, Messrs. Rollisson, of Tooting, Messrs. A. Henderson and Co., Mr. Wheeler, and Mr. Ware, and comprise Palms, Dracænas, Orchids, Azaleas, Camellias, Amaryllids, &c.; and as extra prizes are awarded to the whole of the exhibitors we need not particularise.

Botanical certificates were awarded to Messrs. Veitch for the Abyssinian Primula Boveana noticed last week, and Acropera species; to Messrs. A. Henderson & Co. for Ficus lanceolata; to Messrs. Rollisson for Davallia clavata; and to Mr. Williams for Aucuba luteo-carpa. First-class certificates were awarded to Messrs. Veitch for Hippeastrum Chelsoni, Leopoldii, maculatum, and Brilliant; the first two have been already noticed in our pages; the last two are also very fine scarlet varieties, with somewhat of the spotting of H. pardinum towards the base of the petals.

VARIEGATED NATIVE PLANTS.

Sedum acre aureum.—This, the most beautiful of all the British Sedums, is a Kentish variety, and originated in a sport of one small shoot in a cottage garden at the base of Shooter's Hill, near Blackheath. I wintered it in a cold frame, and it grew rapidly during last summer. It will be one of the most charming companions possible for Sedum glaucum in miniature alpine scenery, being throughout the season of a yellow tint, and will look well and keep its character all the year round. The variety usually called Sedum acre aureum will certainly have to abdicate in its favour; this, Sedum glaucum, Antennaria tomentosa, and Thymus citriodorus aureus with its rich golden yellow tints, are four plants it will be difficult to match for special purposes amongst all the numerous families of alpine plants now in cultivation. Antennaria tomentosa and Sedum glaucum are suitable plants to represent snowcapped mountains. Sedum acre aureum, with the deeper golden-tinted Thymus citriodorus aureus, may be said to be fit to give a warmer colouring to the sunlit slopes of alpine valleys; and I think we may congratulate ourselves on securing for this charming style of gardening such valuable acquisitions as these new plants. I must confess to a weakness for the natural style of gardening so ably carried out at Battersea under that prince of decorative gardeners Mr. Gibson, who is introducing some still bolder imitations of natural scenery in the shape of rugged crags, which will add a grand feature to that Mecca of the flower gardener.

Helianthemum vulgare variegatum.—On the sunniest banks and the most arid crags may be found luxuriating that beautiful British plant Helianthemum vulgare; it will also grow well in any ordinary flower border. It is very easily propagated in sandy soil, in a cold frame, during the months of July and August, along with the many beautiful double and single garden varieties; but the variety to which I wish to call attention is a form of the ordinary wild H. vulgare, and it is certainly a gem of the first water. The foliage is evenly margined with bright yellow, and it will prove one of the very best plants for the sunny rockery or any other very exposed and arid situation. I discovered this plant in Buckinghamshire last summer; it is a sport, but from what I can see, it will be permanent.—W. E., *Cromwell House*.

HINTS ABOUT HEATING WITH HOT WATER.

I would say to those who may contemplate changing their boiler, whether from its being worn out or not being large enough—perhaps through adding a greater length of piping—before you purchase a new boiler be sure you have the correct measurement of the pipe. In measuring, if you have 2-inch pipes, the quantity must be divided by 2 to bring it to the required length of 4-inch pipe, if 3-inch pipes, deduct one-fourth. Should there be any likelihood of additional houses being built, it is well to have a larger boiler than is absolutely required, for I find from my own experience here that it takes proportionally less fuel to heat a large boiler than it does for a small one. I therefore prefer one large to two small boilers. In many cases the cause of boilers not giving satisfaction, is their being too small: a boiler sent out by the maker as calculated to heat 300 feet of pipe, cannot be expected to heat 500 feet of pipe. I had a boiler which was sent out as capable of heating 350 feet of pipe, and the length of this was 570 feet; the consequence was that when the frost was severe or likely to be so, a man had to be up all night; and I remember that on several occasions during December, 1869, though the water was boiling, there was not sufficient power to keep up the required heat.

In setting the boiler give the flue plenty of room; in my case the flue over the boiler is 5 inches, running into a flue 12 inches by 9 inches.

When putting up a Jones's terminal saddle boiler I made what I considered a decided improvement, by adding a dead plate 5 inches in width in front of the bars, and striking an arch of firebrick level with the boiler inside, this being independent of the flue over the boiler. The improvement is at once visible, as

I am enabled to have a larger fire, and the fire heats the water with greater ease than it would otherwise do, for it plays on the boiler at once. Without my dead plate I could not have so large a fire; the boiler could not be heated so well, because however much fire were put on, the body of it could not be made to play on the front of the boiler as by my plan. This, of course, will make no difference as to the amount of fuel consumed, as when once the heat is obtained the draught can be reduced by closing the damper, but it certainly brings the heat up to the requisite degree much more quickly—a great desideratum, besides retaining the heat much longer. I consider Jones's terminal saddle boiler a boon to gardeners; certainly I have found it so, though I do not say it is the best boiler, but it can be set where many others could not.

Another of my additions is a damper in front of the boiler, besides the four side ones, as I hold that it is very essential to keep the top of the boiler free from soot. The damper in the flue is placed 6 feet from the back of the boiler, the frame of the damper being securely set in brickwork to make it firm; and I find, after several experiments, that it acts better to have it at that distance than nearer the boiler. Certainly I would not be without this damper, though I have a slide in the ash-pit door. My reason for having a damper in the flue is, that on a frosty morning, after the fire has been raked clean and stirred up (adding a little fuel) as soon as the fire is fairly burning I gradually push the damper in, so as to concentrate the heat about the boiler. When making up the fire for lasting all night, I first of all secure the required heat, and when this is done, I put on a few shovelfuls of fuel, shutting both the fire and ash-pit doors, and, lastly, regulating the damper and the slide according to the weather.

The slide in the ash-pit door is another useful adjunct to the boiler. When fully open the space is 3 inches square, and when I leave the fire at night I put double the quantity of draught on the flue as compared to that at the slide. Thus, if I leave 3 inches of slide open, which I do on a severe night, I leave out the damper in the flue 6 inches. Both the fire door and the ash-pit door should fit as closely as possible, and the ash-pit should be kept clear. I find that it is most convenient in the morning, when the fire is started, to have a basket and put the ashes in at once, and by that time one can see how the fire is going on. When once the fire is thoroughly started, rather than put the poker in to stir the live fire about, I would with the poker gently prick the dust out from between the bars underneath.

The bars, being tubular, add to the heating power, and reduce clinkering to the lowest point; in fact, I might without exaggeration say there are no clinkers. I would advise those who have the old style of bars to make their ash-pit waterproof by cement, and to keep regularly 1 or 2 inches of water in it. When a fire clinkers, half of the heat is lost. It is of the utmost importance to keep the boiler clean outside and inside by clearing soot away regularly, and running off a portion of the water every week. Great care is needed to keep the side flues of the boiler free from all obstruction, but this will soon be found out by those who have to work a boiler of the description referred to. I make up the fire at 9.30 P.M., and leave it without further attention till 6 o'clock next morning; and though we have had a long continuance of severe frost, I always find a good fire in the morning, and plenty of heat in the pipes.

The fuel used by me in winter is generally coal slack and gas coke in equal proportions, as I believe I obtain a stronger heat from this mixture than from coke alone, and a fire quicker. In summer, when firing is but little required, I use coke, the smoke from slack being objectionable, though I believe the fumes from coke are more injurious to vegetation than those from coal.

I also attach great importance to having air taps at the highest points of the different houses. I will only say that I have had no less than six such air taps put in since I came here, believing it to be impossible to heat a long range of houses on different levels without the aid of such taps.

I now come to the quantity of fuel consumed in four months. From September 9th, 1870, to January 9th, 1871, I burnt six tons of slack and coke, the price of which delivered was 8*s*. 4*d*. per ton. For the corresponding period of 1869-70, with a double boiler—that is, one boiler flat above the other—I do not know the exact name of the kind, but it is square; some call it a Dutch-oven boiler—I consumed eight tons of fuel. So I have saved two tons of fuel besides obtaining extra heat, not to mention the increased comfort in working the boiler. The lowest temperatures which I have maintained in my houses this winter, have been in the fernery, 55°; in the early vinery, 40°; in the late vinery, 38°; in the Melon pits used for keeping bedding plants, 36°. I give the above readings as the lowest there have been for the last month. I feel confident Jones's boiler is capable of doing more than I have yet required of it. The conservatory being adjoining the house is heated from its own boiler.

In conclusion, I may remark that however good a boiler may be, it will not be satisfactory if it be not large enough for the work required. Also, that such a boiler cannot be kept going without sufficient fuel.—STEPHEN CASTLE, *Bent Hill Gardens, Prestwich.*

CALCEOLARIA CULTURE.

IN August I commence propagating; for this purpose I use shallow boxes or trays 2 feet long, 18 inches wide, and 3 inches deep, with twelve holes half an inch in diameter, bored through the bottom. The soil I employ is a mixture of equal parts of turf two or three years old, and well-decayed cow dung finely chopped with the point of the spade, not riddled or sifted, the whole well mixed, placed in the boxes, and pressed firm, crocks and sphagnum moss being put into the box previously. About half an inch of river sand is spread over the surface, leaving a space of about half an inch from the surface of the sand to the edge of the box for watering. The cuttings are next inserted, and well closed with a small dibber kept for the purpose of propagating; they are then watered and placed in a cold frame with ashes at the bottom. They are kept during the day slightly shaded, and air is allowed to pass freely through the frame, except at night.

When the cuttings have struck and made about an inch of growth, I stop them; this stopping very soon produces three or four side shoots, and as soon as they are perceptible, I remove the plants to the orchard house (span-roof), and place them on a shelf in the centre of the house, at about 2 feet from the glass. They require to be stopped again about Christmas. As soon as March has set in, I again remove them to the cold frame, and gradually harden them till the beginning of April, when I take off the lights entirely, and expose the plants to the weather night and day. If the plants are in the least inclined to be leggy, I head them again, but never after the middle of March. In the size of boxes mentioned, I put five dozen cuttings for bedding out, or three dozen for pot culture. I never stop them more than twice, and not after Christmas. I use liquid manure to plants for both purposes.

The kinds I grow are Amplexicaulis and Aurea floribunda. The latter is my favourite variety, it has so many good qualities, and it is the best for pot work.

The plants are bedded out from the boxes, and generally take all the soil from the box with them. The turf should be gritty, such as is obtained from road sides; if it is not sufficiently so, river sand may be added.—JOHN C. LEWIS, *Sudbury, Derby.*

WEBB'S IMPERIAL POTATO.—In the article on Potatoes by "D., *Deal*," Webb's Imperial, *alias* Dawe's Matchless, *alias* Glory of England, are mentioned. I tried some once, in 1865; my experience entirely coincides with that of "D., *Deal*," excepting in the flavour, which I found excellent, it being so considered by many friends who partook of them. I found one decided disadvantage, their being very much blighted on being dug up. The crop was enormous, the tubers immense, for the most part, but nearly half rotten. My soil is chalk and rock, with but little mould, though that is very rich.—A SUBSCRIBER OF TWELVE YEARS.

PEACHES IN THE NORTH.

A CORRESPONDENT, at page 163, says, "We have now a smallish white Peach sent as a Noblesse (which it is not), that is delicious." I am rather interested in Peaches doing well in the north, and would like to ask Mr. McCulloch if the Peach noticed above is not the Malta? also, What is the altitude of the place where they are grown? I have a few Peach trees here on walls (the general altitude of the place is about 600 feet above the sea-level); amongst others I have Acton Scot and Malta. The Acton Scot I consider very valuable, as it just ripens in time to prevent a blank between the house Peaches and those grown outside; while the Malta is the very latest, and is of as good flavour as the Acton Scot. I had dishes of very

good-flavoured Peaches of the former up to the 15th of last October. The remarks on the other varieties I can quite endorse, as they are all grown here.—J. W. K.

[The white Peach referred to in "J. W. K.'s" letter does not agree with the description of the Malta given in Dr. Hogg's "Fruit Manual," being neither "large" nor "blotched with dull purple next the sun."

The garden here is about 30 feet above the level of the sea, distant one mile as the crow or the bee flies, but considerably protected from the breeze by a hill between the garden and the sea which rises to the height of 250 feet above its level. The tide here flows in from the north from what is called the Gulf Stream. By the "Weather Report" of the *Times* it will be seen that from February 25th till March 3rd inclusive, the temperature at the towns in the north of Scotland was milder than at those on the south coast of England. At Thurso, on the 3rd of March, the thermometer registered 60° at 2 P.M. Here, on March 2nd, it stood at 62° at 12 noon. Nairn, about twenty miles distant, is the nearest town to us from which the *Times* gives a report, and our climate is considered a little milder than that of Nairn. The atmosphere is usually very dry. White Wheat is the staple produce of the country.

Perhaps unfortunately, some Apricot trees in this neighbourhood have been in blossom ever since the 3rd. We have had a large Rhododendron atrovirens of great beauty in blossom for ten days.—JOHN MCCULLOCH, *Duffus, Elgin.*]

GROUND LEVELLING AND PRACTICAL GARDEN PLOTTING.—No. 14.

DRAWING PLANS.

To draw and transfer *fig.* 37 to the ground, erect square A B C D, and draw the diameter lines E F and G H, also the diagonal lines A C and B D. Draw lines connecting points E G, G F, F H, and H E. Draw lines 1 2, 2 3, 3 4, 4 1, also 5 6, 6 7, 7 8, and 8 5. Draw lines 9 10, 10 11, 11 12, and 12 9. There are four squares drawn within each other; the space between the lines is 4 feet. On the diagonal lines A C and B D draw the squares as shown in the following manner: — Where line F H crosses diagonal line B C place one point of the dividers; open the dividers and place the other point as in the point *m*; on the diagonal line B C prick the paper lightly, turn the dividers round and prick the paper as at points *n* and *k*; draw a line from point *k* to point *m*, and from point *m* to point *n*. Where line 3 4 crosses the diagonal line B D place the dividers as before, and prick the paper as at points *g*, *h*, and *i*; draw lines from point *g* to *h*, and from *h* to *i*. Where line 7 8 crosses the diagonal line B D place the dividers as before, and prick off points *d*, *e*, *f*. Draw lines *d e* and *e f*. Where line 11 12 crosses the diagonal line B D place the dividers as before, and mark off points *a*, *b*, *c*; draw lines *a b* and *b c*; draw the inside square, allowing the sixth part of an inch, or 4 feet for the walk. Draw the corresponding squares in the same manner, then draw the four rectangular beds in the centre, also the square, and to make the design complete, draw lines 13 14, 15 16, 17 18, 19 20, and lines *r s*, *t u*, *v w*, and *x y*.

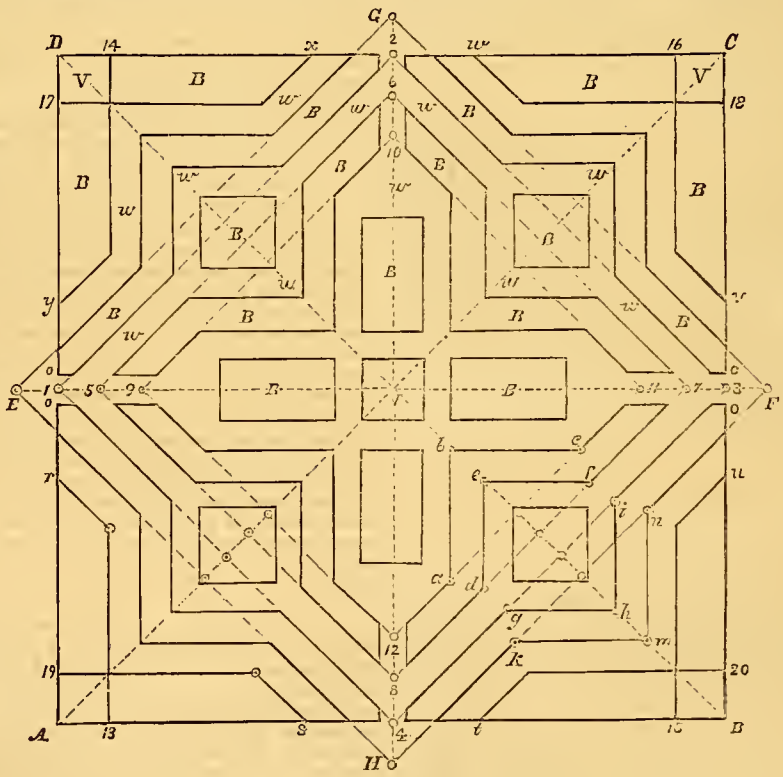


Fig. 37. Scale 24 feet to the inch.

To transfer the plan to the ground, construct the square A B C D, the distance between A and B being 84 feet. Lay the diameter lines E F and G H, also the diagonal lines A C and B D. Lay a line from the stake at point E to the stake at point G, the distance between which is 67 feet; also lines connecting G F, F H, and H E. From the stake at point E, on line E F, measure 5 feet, and insert a peg as at point 1; again, on the same line from the stake at point E measure 10 feet, and insert a peg as at point 5; also from the same stake measure 15 feet, and insert a peg as at point 9. From the stake at point G measure 5, 10, and 15 feet, and insert pegs as at points 2, 6, and 10. From the stake F measure 5, 10, and 15 feet, and insert pegs as at points 3, 7, and 11. From the stake at point H measure 5, 10, and 15 feet, and insert pegs as at points 4, 8, and 12. Lay lines connecting the pegs at points 1 2, 2 3, 3 4, 4 1, also lay connecting lines between points 5 6, 6 7, 7 8, 8 5, and between points 9 10, 10 11, 11 12, and 12 9. The four squares are lined one within the other. Where the line laid from the stake at point F to the stake at points H crosses the diagonal line B D, insert a peg as shown by the small circles. On each side of the stake at points F H measure 12 feet, and insert pegs as at points *k* and *n*; measure 12 feet on the diagonal line towards B, and insert a peg as at point *m*. Lay lines joining points *k m*, *m n*, the line is H *k m n* and F. Where line 3 4 crosses the diagonal line B D insert a peg; on each side of that peg on line 3 4 measure 10 feet, and insert pegs as at points *g* and *i*; on the diagonal line measure 10 feet, and insert a peg as at point *h*; lay lines connecting pegs *g h*, *h i*, the line is 4 *g h i* 3. Where line 7 8 crosses the diagonal line B D insert a peg; on each side of the peg measure 10 feet, and insert pegs as at points *d* and *f*; measure 10 feet on the diagonal line towards the centre, and insert a peg as at point *e*; then lay a line from peg *d* to peg *e*, and from peg *e* to peg *f*, the line is 8 *d e f* 7. Where line 11 12 crosses the diagonal line B D insert a peg; on each side of the peg measure 11 feet 6 inches, and insert pegs as at points *a* and *c*; on the diagonal line measure 11 feet 6 inches, and insert a peg as at point *b*; lay a line from peg *a* to peg *b*, and from peg *b* to peg *c*, the line is 12 *a b c* 11. Find the square in the centre, the side of which is 10 feet. In the same manner find the corresponding points on the same line next to D. Also on the diagonal line A C insert a peg at each point, and lay lines as before. On each side of the diameter lines E F and G H, as from points 1, 3 and 2, 4, measure 2 feet, and insert pegs as at points o o and o o. Lay a line connecting these pegs, which will cut the end of the beds and leave a

space of 4 feet for the walk. On each side of the stake at point A measure 6 feet, and insert a peg as at point 13, also at point 19. On each side of stake B measure the same distance, and insert pegs as at points 15, 20. From C find points 16 and 18, and insert pegs; also from D find points 14 and 17, and insert pegs. Lay lines connecting points 13 14, 15 16, 17 18, 19 20, also points *r s*, *t u*, *v w*, and *x y*; the latter lines will be found to cut the ends of the side beds. Find the centre square, the side of which is 7 feet; also find the four rectangular beds, the sides of which are 7 and 15 feet respectively. Insert pegs at the corners, and lay lines completing the figure. The lines are intended for Box edging; B, beds; *w*, walks; *v*, vase.—M. O'Donnell, *Gardener to E. Leeming, Esq., Spring Grove, Richmond.*

PUZZLING THE SPARROWS.

Living in the outskirts of Oxford, having a garden of about an acre, and being surrounded by houses, my greatest enemies have been house sparrows. The cooks at these houses make the practice of feeding the birds, so, of course, I have more than wanted to visit me. When my Peas, Radishes, &c., have been up, these young gentlemen soon make their appearance and destroy everything. Of course I have no netting to go over all the garden. I have tried everything that can be mentioned, such as sawdust, cotton rags, glass, &c., but this year I am pleased to say I have beat them.

I make a practice of sowing Peas between Potatoes, so, therefore, they are far apart. I bought some crow-string, of which you get twelve balls for 1s., and I have a small can with a spout. In this can I place the ball of string, drawing the end of it through the spout. I first of all see if the string will come out, so as not to get entangled; then I put in three sticks at one end and three at the other end of a row of Peas. I commence my work by pouring some gas tar that has not been boiled into the can. I tie the string at one end, carry the can to the other, twist the string round the stick to and fro. After that I go away with comfort.

My fruit trees have been subjected to the same protection by putting a tall stick at each end and each side, taking the string to and fro from top to bottom, and you would be surprised to see a sparrow who has settled on the string! He flies away to the rest of them, and seems to me to inform them of such treatment—the gas tar sticking to his feet, and not easily to be removed!—A Friend not to Sparrows.

HAND BOUQUETS.

It is not without some misgivings that I address myself to a subject on which many opinions exist, especially as my own may be at variance with much that is met with in actual practice; but I am emboldened by the fact that on a former occasion several years ago, when I ventured to differ from what was almost the generally received opinion on a matter of ornament, and was condemned for doing so, I had the satisfaction of finding much that I said then was afterwards approved of. I therefore venture once more to appear as a censor in a matter of which your fair readers, doubtless, think they ought to be considered the best judges, and I may, perhaps, suffer for my temerity.

I shall commence the attack on what may be termed neutral ground. The architect and builder of a house, if it be a good one, are generally allowed some share of the credit, as well as the owner, and they must expect to share the blame if it is otherwise than good. In a like manner, we, as directing the arrangement of some of Nature's choicest ornaments, must not expect to come off scatheless, if we do our work in a clumsy and distasteful manner. Now, the very mention of the word taste carries with it so much that is controversial, that no one has yet been able to define properly what that term really includes, everyone setting up a standard for himself, for with the exception of certain features of ornamentation derived from nations that have disappeared centuries ago, which features are but rarely attacked, there is nothing of modern date but what is made the subject of dispute. The buildings of the last century, however substantial and convenient they may be, are almost invariably condemned as defective in ornament, or where the latter has been attempted, it is said to be of an improper kind; while, on the other hand, old castles, churches, and other structures of the thirteenth and fourteenth centuries, are almost worshipped, until, perhaps, it is accidentally found out that their erection took place at a more modern date; then their condemnation is ensured. Now there is something very much akin to this in gardening matters as well. A sort of compact seems to have been entered into of late years to expel from the flower garden and exhibition tents all but a few orthodox members, and as a consequence a certain degree of sameness pervades both. This cannot justly be called taste, though it may be fashion; the one is like the laws of the Medes and Persians unalterable, the other may claim extraordinary consistency if it remain the same for twelve months, the laws that govern true taste being the same in all time—the same in 1871 as in 1831, or centuries before.

Of late years flowers have been considered a necessary feature wherever other fine things are. Churches on festive occasions are often decked with flowers, and in the graveyard flowers also play a conspicuous part. In the decoration of the rooms of the affluent flowers are as much in request in some cases as furniture, and their ameliorating influence in our large towns is not sufficiently recognised. Witness the pleasure with which the ragged urchin from some confined garret gazes on the beautiful flower beds that adorn the London parks and many of those connected with other large towns, and yet he does not injure them, although the innate desire he has for mischief would have found vent had these flowers been something else; but to him they are sacred, he gazes at them, and admires them in his way, and passes on. Let us hope their presence may bring better things into his mind. Certain it is that wherever flowers make their appearance in a window, the visitor is sure to find peace and good will in that room; but I must not dwell further on this subject here, as my purpose is to find fault with flowers being placed where they ought not to be, or in a way not to be approved of.

For many years, I may say centuries, before horticultural and other societies gave encouragement to well-arranged bouquets, these tokens of good feeling had existed under the modest but expressive title of nosegays; and if we searched into their early history it would most likely be found that they originated with children. No one who has watched the playful actions of the young can have failed to observe the fondness they display for flowers, collecting them with great assiduity, and evidently admiring them with all the relish of a connoisseur almost as soon as they can toddle alone; years afterwards when their turn comes to attend the village school the girls may often be met with on a spring morning making up for their governess a nosegay that a royal gardener cannot excel. Primroses and Violets, with an outside bordering of the foliage of the latter, make one of the prettiest of all bouquets, and exceeded by none in point of sweetness. The agreeable contrast these two flowers offer to each other cannot be surpassed, and their quiet and unassuming beauty is never excelled by the riches of the flower garden in advanced summer. I have often instanced these flowers as being the best from which a nosegay could be made, and one confined to them alone as a model of what a nosegay ought to be, not only because of the beautiful combination of colours, but from the fact of their seldom exceeding those moderate dimensions to which I think all bouquets intended to be carried in the hand ought to be confined. Here I expect to meet with much opposition from the fair sex, who assume to be the only judges in such matters, but I nevertheless make the attack on those huge artificial bundles of flowers which they affect to prize so much, and some of which as objects of manufacture are certainly deserving of great praise, but as objects of beauty there may be some difference of opinion. On the equally important point of utility there can be no question that the size of hand bouquets often renders them an unwieldy appendage, but as fashion has ordained so they have to be, and one can only have the privilege of grumbling about them. Let us now endeavour to see in what way they can be made to serve the purposes for which they are required, and at the same time present the best appearance the materials will allow.

At most horticultural shows of late years it has been the custom to offer prizes for the best bouquet for the hand, as well as one for the table; and here I shall confine myself to the first named. I have on some occasions acted as one of the judges in this department, and there is nothing, perhaps, at a show on which the judgment is more likely to be criticised. An experienced friend told me he would rather undertake a judge's duties in any department than in that of bouquets and Grapes, the difficulty in discriminating between the rival merits of specimens of the latter being as unpleasant as that arising from the different views which each one takes as to what should guide the censorship of bouquets. The critical eyes of the many fair lookers on in the after part of the day show that the

bouquets are amongst the most attractive features at the show, and it is almost sure to happen that some—very possibly a large number—differ in opinion from the judges; sometimes, I believe, a protest has been entered against the decision—although I have not known any case of such being made—and of course where this is the case some unpleasantness is the result. Now, if bouquets were judged by some code of laws like that attempted to be laid down for judging Grapes, some reasons might be given for the decision. Perhaps some one will be good enough to put forth a few ideas bearing on the matter, and by way of an introduction I beg to submit the following crude notions as to what I think ought to be borne in mind when such things are placed before a judge.

1. A hand bouquet must be made so as to be easily carried in all positions in the hand without any of its parts being disarranged when it is turned upside down; and to prove this the judge to be at liberty to swing it sharply about in all directions in his hand, and if it will not bear this ordeal, to reject it.

2. The bouquet to be shown without any paper or other guard or bordering, excepting that of flower or foliage; the handle also not to be too thick, for the reasons given in Rule 1.

3. No flower having a disagreeable smell to be used for a hand bouquet; where such exists the bouquet to be disqualified. N.B.—This rule need not be enforced in a stand of flowers for the table, unless it be thought advisable to do so.

4. The quality of the flowers used—*i.e.*, their rarity not to be taken into consideration unless the arrangement be equally good, or better than where common ones are used.

5. No bouquet to be exhibited under a glass shade unless all are provided with this appendage, but the exhibitor may be allowed to keep one over his bouquet until requested to remove it prior to judging, not afterwards.

6. Dried and Everlasting Flowers not to be mixed with fresh ones, and the same may be said of foliage.

7. Flowers may be mounted on wire or other substance, but too much wirework ought not to be used, so as to indicate its presence by the weight of the bouquet.

It is not assumed that the foregoing rules embody all that may be necessary, but I throw them out as a sort of outline to be added to or amended as may be thought proper. At the same time let it be borne in mind that they are intended for guidance in judging hand bouquets, and not those for the table. The latter may have a more feathery outline, as they are not expected to be turned upside down, but the hard usage those for the hand have to undergo necessitates their being somewhat formal and compact, and the overspreading sprig of Maiden-hair or other Fern which may be merely stuck in amongst the flowers of the table-stand ought to be firmly fixed in its place in the hand bouquet, otherwise it will be speedily displaced when the latter is brought into use; the judge ought, therefore, to ascertain this, and if it or any flower fall out when the bouquet is turned upside down, or subjected to such trials as a bouquet will in ordinary usage have to undergo, he is not expected to replace them, but to lay them by the side of the bouquet to show its defects to the public.

Great size having been already spoken of as objectionable, the other extreme must also be avoided; but much weight ought to be given to an agreeable combination of colours, and in general the best effect is produced by the fewest varieties; about three, or at most four, kinds of flowers with the necessary foliage, be it Ferns or anything else, are sufficient for most nosegays, and I am not certain but one or two kinds of flowers only would be better still. Formality, however objectionable in other combinations of flowers, is indispensable in a nosegay, otherwise it will not endure hard usage, and such flowers only as have stiff stems and are otherwise capable of enduring hard usage should be allowed to project beyond their fellows; the same may be said of foliage. The judge should be guided by what he would expect the bouquet to be after an hour in a ball-room, and not merely by what it is at the moment.

Perhaps one class of bouquet may be in some degree exempt from the rather severe ordeal I have advised for the others, and that is the bridal bouquet; for a greater amount of care and gentle treatment is likely to be accorded to it, and it need not undergo the five minutes' gyration I have sometimes thought others ought to do on the vanes of a windmill. Still I would insist on its veil of Fern, which seems an indispensable accompaniment, being fixed so as not to come out when turned upside down; and as custom has established the rule to confine this bouquet to white flowers only, I will in this instance find no fault with it, but may say that a liberal allowance of green is an improvement. As a censor one must handle the bridal bouquet as well as the others, and if any of the contrivances used to mount the flowers be visible, or the handle too thick, or the whole too heavy, I would be disposed to judge unfavourably of it, for no surroundings of lace, be it from Brussels or still further off, can compensate for a bad arrangement of Nature's choicest ornaments.—J. Robson.

THE EFFECTS OF THE WINTER.

We are now, after some fine weather and sunshine, able to see to the full extent the effects of the past winter upon vegetation generally; and I conclude, from what I have seen and read, that at other places though the cold has been as severe as in the winter of 1860-61, there has not been so much damage done among large trees of the Fir tribe, and large evergreens of different kinds, as in that winter. The principal reason of this difference is, no doubt, from the winter of 1860-61 having occurred after a very wet summer and autumn, while last summer was exceptionally dry, so that most plants would be more perfectly at rest, and, consequently, better prepared to bear the effects of a hard winter than in the winter of 1860. At this place (Hatfield), I have not known the thermometer fall below 4°, or 28° below freezing, nevertheless this temperature has proved too severe for many things except evergreens; these and all the Fir tribe are as fresh as ever, and in the kitchen garden the most tender of the wall-fruit trees, such as Peaches, are not in the least injured. These and most other trees on walls are showing for bloom as well as anyone could wish; but many stools of Raspberries have been killed outright.

Of green vegetables there is very little left alive; whole quarters of Broccoli have been killed to a plant, especially the plants which were large and growing luxuriantly, but a few that were planted late have escaped, such being so dwarf as not to show any stem above ground. I have before noticed the fact, that late-planted Broccoli will often withstand the severe weather better than that planted early, owing, I conclude, to its being dwarf and compact, and the tender part of the stem just under the leaves which the frost attacks first being so well protected by leaves. Those sorts of Broccoli which have stood the winter best are Purple Sprouting, Melville's Dalmeny May, and Wilcove. Among Kales are Melville's Variegated, Dwarf Green Curled, and Buda Kale. Brussels and Dalmeny Sprouts are uninjured. I may mention that a bed of some hundreds of the little Rosette Colewort, although growing close to some Watercress beds, and therefore always surrounded with water, have passed through the winter almost uninjured, while in a large bed of spring Cabbage standing on a dry bank there are hundreds killed. Again, there were two beds of Spinach sown, one in the early part of September and the other early in October; the former has borne the severe weather well, and is now producing some good dishes, while the later-sown bed is worthless. For years I have practised sowing my principal bed of Winter Spinach in August; it then yields a good produce till the winter is far advanced, and at the same time gains strength to pass through the winter and yield again long before the later-sown bed. It is, however, always well to sow in October also, for besides providing against an extra demand, picking from this bed saves the other or winter bed from being exhausted so much as it would otherwise be. Celery has not been much injured, as it was earthed-up well and carefully, which is a great security, and the tops of the ridges were protected with Fern and rough litter. The hardiest Celery has proved to be Veitch's Silver White and the Incomparable Dwarf White, and among Reds Cole's Defiance. If it were possible to always obtain the above sorts true, gardeners would require to grow no others. Veitch's Silver White is a first-rate early Celery, next comes Defiance Red, and lastly, Incomparable, which is the hardiest of the three sorts—indeed, of any that I have grown. Henderson's Conqueror is also a first-rate white sort.

Doubtless, the severe winter will leave behind some valuable lessons to gardeners; one of the principal will, no doubt, be to provide some safer way of protecting the Broccoli crops—it is the one thing needful to gardeners. I do not like the system of laying Broccoli which is practised at many places. I never could save so many in that way as by letting them stand as they grew. I say let them stand and receive the benefit of sun and air to harden their stems, and if much wet weather come before frost, which is often the case, they have a chance to dry, and will bear it better and longer without injury. I never practised laying Broccoli until last autumn, and I am sorry for it, as they are all killed; it is among those not laid that any which have survived the winter are to be found. If a bed of Broccoli were

growing too luxuriantly in autumn, I would rather cut the roots with a spade to check the growth than bury the stems in earth to become blanched and tender, and soddened with wet at the time frost comes on. What is the opinion of others on this point?—Thos. Record, *Hatfield Park, Herts.*

According to Mr. Adderley's remarks on the severe frost (see page 66), it appears to have had more effect on vegetables in Kent than in some parts of Westmorland. My reason for delaying sending these notes has been that I wished to give the plants a fair trial with the heat of the sun upon them before coming to a conclusion as to which of the varieties have stood the winter the best.

Shrubs are not in the least injured here. Asparagus Kale, Cottagers' Kale, Cabbage Sprouts, and Brussels Sprouts have stood remarkably well. I commenced gathering Brussels Sprouts on the 16th of October, Cottagers' Kale on the 20th of November, and Curled Kale on the 9th of December; I have done so daily ever since, and have still a plentiful supply. Veitch's Late Curled Kale is very good, has borne the frost well, and does not seem any the worse, but the Dwarf Green Curled Kale is killed. Of the various sorts of Broccoli which we grow, Knight's Protecting, Dalmeny May, and Cattell's Eclipse have stood the best. The soil in which they are growing is very light, they are exposed to the north winds, and have not had any artificial protection. The Broccoli is all standing as when planted, not laid-in.

One of the most useful vegetables to me this winter has been the Leek, and it can be highly recommended when cultivated in the mode adopted here, which is as follows:—Dig a trench 18 inches deep, allow 1 foot between the rows, and 6 inches between the plants. By earthing them up, a length of about 8 inches of the Leek is beautifully blanched, and makes a useful vegetable for winter, especially in a season like this. The most severe frosts, as registered by Negretti & Zambra's thermometer, were, on January 1st, 20° of frost; on the 26th, 18°; on the 27th, 20°; and on the 28th, 19°.—E. E., *Windermere.*

GARDENERS' MUTUAL IMPROVEMENT SOCIETIES.

I read with much pleasure the article in this Journal respecting the Maidstone Gardeners' Mutual Improvement Society, more particularly as at the time I, and several others, were endeavouring to organise a similar one at York.

York stands high in respect to the patronage it bestows on horticulture. It has one flower show, or, as it is termed, a gala every year, and the liberal prizes offered are such, that they gather together specimens which in quantity and quality can scarcely be surpassed, even at the metropolitan shows. It also boasts of an "Ancient Society of Florists," said to be the oldest of the kind in England. This society, which had its origin upwards of a century ago, has undergone many vicissitudes of depression and prosperity, at times counting its members by units, but at present with an enterprising secretary and treasurer, and an intelligent committee, at the head of affairs, it can almost count as many members as it is years old; but though praiseworthy, it can scarcely be called a gardeners' society. It has been felt a great want by many of the gardeners in and around York, that there is no properly organised society to meet and discuss matters connected with their profession. Several enterprising men took the matter in hand; amongst the more active may be mentioned Mr. McInnes, gardener to the Hon. E. Lascelles, Middlethorpe Manor, and Mr. Cowl, Burton Nursery, York. Several meetings were held, and it was at first proposed that a deputation should wait on the "Ancient Florists," to see if an arrangement could be arrived at, to connect such rules with those of that Society as would meet the want felt. But the majority thought it would be too much like "going a begging." So it was resolved, that they should form themselves into an independent society for the present; and should an amalgamation be felt desirable at any future time, both societies could treat then on an equal basis. Circulars were issued to several gardeners in the neighbourhood, and a meeting was held. Upwards of twenty members signed their names, when a president, secretary, and treasurer, were elected, also a committee was formed to draw up rules for the guidance of the society. These were formed on the basis of the Maidstone rules. One important resolution passed is, that the meetings shall not be held at a public house. A great many more persons have signified their willingness to join, likewise several honorary members, and at present the Society promises to be popular. From the hearty manner in which all present wished it success, there is no doubt that it will prosper, if the members will but act up to their promises.

My motive in drawing attention to the subject is to induce other provincial towns to do likewise. There is no reason why every town and village in the kingdom that holds a flower show, should not form a society of this kind, and not for each to hold an isolated position, but all to join into one general society. Then subjects connected with gardening and gardeners could be discussed, and the conclusions arrived at put into operation with better results than at present. If a few enterprising gardeners in various districts would take the matter up, I believe in the majority of cases the movement would be popular, consequently successful. Although the Maidstone Society has not been the first to start a movement of this kind, still the state of prosperity which it has attained should be imitated by every town in the kingdom. If generally organised, what a grand holiday gardeners might have once a-year, if a day and place should be appointed for an excursion to the Crystal Palace—like the Foresters or Oddfellows—or to Kew or Hampton Court, &c. "Young men from the country" would have an opportunity of seeing the London parks, and other places of interest to them in the metropolis. Gardeners are so migratory, that it is not uncommon for them to have acquaintances all over the kingdom. What congratulations and shaking of hands there would be! How many old friends would meet who had not met for years! This is but one view of the benefits; but before pleasure business, and while I was led away by the pleasing dream, I forgot that a great deal of business must be done before that pleasure is arrived at.—A Yorkey.

NEW BOOK.

The Forester, or a Practical Treatise on the Planting, Rearing, and General Management of Forest Trees. By J. Brown, LL.D., *Wood-surveyor and Nurseryman, Stirling.* Fourth Edition. W. Blackwood & Sons, Edinburgh and London.

Although a fourth edition it is a "new book," for we can testify to the truth of this passage in the preface, "The author has carefully rewritten the volume, and added nearly one hundred new sections upon important subjects, which were necessary to bring it up to the advanced state of the times." Nor is this all that claims approval, for Dr. Brown shows that he is a trustworthy guide, by acknowledging when later experience has convinced him that former opinions which he published were erroneous—such wrong opinions are not many, and one instance will suffice.

"At one time I considered the timber of the Q. sessiliflora inferior to that of Q. pedunculata; but from more extended observations on the subject of oak timber within the last ten years, I am now led to state that the timber of the one sort is for all purposes as good as that of the other. In some experiments which I made recently in regard to the comparative strength of the timber of the two kinds, I found that a beam of the sessiliflora bore fully a greater strain under a given weight than one of equal dimensions of the pedunculata. Indeed, for all purposes to which oak timber is applied, that of the sessiliflora is used as plentifully as that of the pedunculata, and in old buildings its durability has been found to be equal to the timber of the other kind."

The increased size of the present volume also sustains its claim to consideration as a "new book." It occupies altogether 850 large 8vo. pages, whereas the third edition contained but 700, the second edition about 500, and the first only 215 of a 12mo. size. That first edition was published in 1848, and appeared very opportunely. Great complaints had been published of the mismanagement of the Royal Forests, and attention was aroused to the fact that, although forest trees need attention to the soil they prefer, the arrangement of their roots when planted, draining, thinning and pruning during their early growth, yet that all these needs were neglected, and the care of woods and forests was committed to men who were more capable of cutting down a tree than cultivating it.

Mr. Brown, when he first published "The Forester," held that situation on the estate of Mr. Dundas, at Arniston, near Dalkeith, and it evinced such a sound knowledge on the subject, that when the commotion about the Royal Forests was made effectual, he was appointed to the surveyorship of Dean Forest. This was in 1854, a testimonial was presented to him on the occasion, and a Foresters' Association instituted, of which he was chosen chairman. In 1861 he was wood-manager to the

Earl of Seafield, and he became and continues one of our best authorities on woodcraft.

There had been small works, and of equally small authority, written on forest management by Monteath, Pontey, Main, and others, but Mr. Brown's volume, even when it first appeared in its diminutive form, and still more decidedly now, is the best and fullest authority on the management of trees, whether in forest, plantation, or hedge-row. We shall make no quotation, but we can assure our readers that they will find in the volume every information they may need relative to forest trees, from the sowing of their seeds to the time of felling, selling, cutting into timber, and keeping woodland accounts; information not only including our older species of deciduous trees, but also the newest-introduced Conifers.

LIQUID MANURES.

All plants grown in small pots, and which are expected to fruit or bloom in little space, will be benefited by the application of liquid manure, if the kind is varied, and the water clear and not given too strong. I have tried most of the concentrated manures which have been advertised, and they are all useful, but I would not use them quite so strong as the dealers recommend.

As a top-dressing for plants in pots, superphosphate of lime is good; as much as can be held between the thumb and two fingers may be put on a 6-inch pot, and if the colour is disliked light soil may be dusted over it. The virtues will be washed in by repeated waterings. If guano were used, less than half the above quantity would be enough to be safe. It is best used as a liquid manure, and if the vessel is large three ounces to two gallons will be sufficient; if it be allowed to stand half a day previous to use, and then the sediment be left, about half the quantity will do for the future mixings. An overdose will do mischief. At such strength the watering is very effective for plants in small pots, either for fruiting or blooming. In the latter case the manure-waterings should rarely be given until the flower trusses appear.

Although I have not a word to say against such concentrated manures, I have quite as great faith in home-made manures. I know there are great virtues in house sewage, and I would use it largely if, when too strong, I could always dilute it; but I have been forced to use it too strong, and the alternative for the plant was either to be injured by excessive dryness or by the application of the too rich sewage undiluted. On a small scale it is easy to take away the smell with gypsum, sulphuric acid, or powdered alum. It is often anything but pleasant to use sewage in its natural state. I do not like men to have anything to do with it until they have broken their fast in the morning. I would place most reliance on made liquid manures, which it is open to every one to use. Horse dung I do not use very much, as when fresh the liquid is very heating. Cow dung, if slightly dried, affords a rich manure water of a cooling character; it does admirably as a corrective to guano. Sheep dung and deer dung are also very good when well soaked. There is nothing better than soot when the water is well cleared and not given too strong, for if strong it will tend to parch and burn the roots. Strawberry plants in pots are easily injured by too strong a dose.

A bushel of horse, cow, sheep, or deer droppings, and half as much of pig droppings when the animal is well fed, will be sufficient for fifty gallons of liquid, and when that is drawn off to the bottom about half the quantity will do for the next brewing. These should be steeped a few days previous to use; a little quicklime added will help to clear them.

One bushel of good dry soot will make a strong liquid for seventy gallons. There is a simple method of making it which should be taken advantage of. The drier and better the soot the greater the necessity for mixing it up first, with a little water, into a stiff paste, just as if you were making fine lime plaster. Unless this be done no after-care will enable you to make the soot and the water mingle freely. This done there is no difficulty, the soot and the water commingle. When the vessel is filled a broom is used to stir all nicely together; then a small spadeful of powdered quicklime is sprinkled over the surface, and the broom is used again. In twenty-four hours, with all this care, there will be a sooty scum on the surface, which it is desirable to remove just as you would take the cream off milk. Underneath, with the exception of the sediment at the bottom, the water will be as clear and bright as dark-coloured sherry. At the above strength of a bushel to seventy gallons, soot water would be too strong for anything in pots. About one-quarter to three-quarters of soft water would be enough when of such strength. For syringing purposes—and in this way it is a great deterrent to all insects—it must be used much weaker, say one gallon of the soot water added to five gallons of clear soft water.

I must now make a few remarks on the receptacles for manure water of various kinds. Many simple makeshifts may be resorted to. The best plan is to have brick and cement tanks where they can be easily filled with fresh soft water, and enough of them to have some with the liquid fermenting whilst others are in use. At one time I had some barrels aboveground near a rain-water tank, but they soon wore out. I found I could have some other large barrels equally worn out and unserviceable as to holding any liquid. Instead of keeping them abovegrounnd, where they were useless, I had a large trench dug out, so that the tops of the barrels stood merely a few inches above the ground level; I then had all the holes and cracks stuffed with old rags and clay, and packed the outside firmly with clay for an inch or so, and then with tar and clay in the spaces between. The old useless barrels have never leaked, and the layer of clay has kept the tar from affecting the water, whilst the latter, mixed with the clay, prevented leakage. What was only fit for burning has thus done many years' good service, and though the staves are in many cases rotten they keep the barrel firm, and answer the purpose as well as if the barrels had been good and useful for their allotted purpose. With a little trouble cottagers might easily make old useless barrels watertight for liquid manures.

In the case of all droppings of animals used for liquid manure, it is well, when it can be done, to soak the droppings at first in very hot water. This will kill the eggs and larvæ of insects.—R. F.

ENTOMOLOGICAL SOCIETY'S MEETING.

The second February meeting of the Entomological Society was held at Burlington House, A. R. Wallace, Esq., the President, being in the chair. Mr. Frederick Bond exhibited a hybrid silk Moth reared by Dr. Wallace, the parents being Bombyx Pernyi and B. Yama-Mai. The antennæ were very broad; the wings dark chocolate-coloured, but like Yama-Mai in form; the eye-like spots of the wings round and like those of the latter species, but the cocoon was of the ordinary colour like that of B. Pernyi, and not of a pale green like that of B. Yama-Mai. He also exhibited a specimen of the common silk Moth, B. Mori, also reared by Dr. Wallace, the head of which was enclosed within the head of the larva, which the insect had not had the power to throw off. Mr. McLachlan mentioned that the first recorded instance of such a monstrosity had been described by O. F. Müller in "Der Naturforscher," in which the monster was a Hypogymna dispar.

Mr. F. Smith exhibited a common Egyptian Wasp, Rhynchium brunneum, communicated to him by Dr. Birch, of the British Museum, which he had found within the folds of the covering of a mummy, showing that the species had inhabited Egypt for many ages without having undergone any change. He also stated that this insect built its nest in the excavations formed by the inscriptions on the ancient monuments of that country, which were by that means filled up and rendered invisible. Mr. F. Smith also communicated a passage from Pepys's Diary dated in May, 1665, in which the writer narrated that he had seen in the garden of John Evelyn, near Hatton Garden, a glass hive, in which the bees could be seen at work, proving that observatory hives were not a modern invention.

Mr. Müller read a paper on the dispersion of non-migratory insects by atmospheric agencies, in which he had collected together a number of records of showers of insects after violent storms, and at sea at long distances from land; and he was of opinion that these agencies played a considerable part in the geographical distribution of insect life, though no doubt in many cases the species thus involuntarily dispersed died out from inability to cope with the pre-existent denizens of the localities to which they were driven.

Mr. H. Jenner Fust communicated a supplement to his treatise on the geographical distribution of British Lepidoptera, on the plan of Mr. Watson's work on the distribution of British plants.

The fifth part of the Transactions of the Society for 1870 was announced as ready for distribution among the members.

WORK FOR THE WEEK.

KITCHEN GARDEN.

The present is the best time for putting in the general crops; the season, the weather, and the state of the ground are in every way favourable. *Carrots*, *Leeks*, *Onions*, *Parsnips*, *Potatoes*, *Parsley*, early *Turnips*, and almost all garden seeds may now be sown whenever the ground is sufficiently dry. Manure and dress *Asparagus* beds. Plant-out in a deep rich piece of ground *Cauliflowers* that have been wintered under protection. When the ground will permit, it will be found a very good practice in transplanting these at this uncertain season to throw-out shallow trenches, placing the removed soil on the north side, and putting the plants in the trenches, which will be thus sheltered from the north winds. Forward *Celery* plants for a very early supply, by pricking-out on a slight hotbed, and sow on the same for succession crops. Stir the soil among growing crops—as *Lettuce* and *Spinach*, and prevent weeds from making their appearance.

FRUIT GARDEN.

Where it is intended to head-down old trees for grafting, this should be done at once, and young stock should be grafted as speedily as circumstances will permit. Planting, pruning, and nailing should now be forwarded as much as possible. These operations cannot be finished too soon. The sap having now commenced its ascending course, broken flower buds and injured shoots will be the certain consequence of neglect and delay. Continue to protect the bloom of Peach, Nectarine, and Apricot trees.

FLOWER GARDEN.

Sweep and thoroughly clean lawns, and give them a double rolling with a heavy roller to render the turf smooth and solid. This is sometimes put off until dry weather sets in, after which the roller makes comparatively little impression; whereas, if done at once while the turf is in a wet spongy state, it will be greatly consolidated and improved for the season. If any alterations or planting still remain unfinished, all available hands should be concentrated on this work so as to complete it as soon as possible. Planting done after this time will require much attention in watering, and this at the very busiest season of the year, especially if large plants are removed, and it is too common a practice to put off such work to the last. Look over the beds planted with bulbs, and where necessary stir the surface soil so as to keep it open and friable, and to give a clean, neat, fresh appearance. If the soil of any beds or clumps for masses requires renewing, or enriching by the addition of animal or vegetable manure, it should be immediately applied in order that they may be ready to receive plants or seeds. Where the same or nearly the same plants are grown for a number of years successively on any of the beds, it is advisable once in four or five years to remove a large portion of the old soil, and to fill up again with fresh material; this practice, however, for some plants, Scarlet Pelargoniums for instance, would be rather injurious, for the latter generally grow more luxuriantly than is desirable, even in the poorest soil. Many bedding plants, however, particularly annuals, take more from the soil than can be supplied to it in a moderate top-dressing, and where we find a certain kind of plant exactly suited to a particular situation, we do not change it every year, but prefer changing the soil. Perhaps no kind of flower garden is more generally interesting than one of mixed herbaceous plants, if they are tastefully arranged as regards height and habit of growth, colour, and season of flowering, and it is owing to a want of attention to these matters of detail that flower gardening of this description is so little in repute. The beds are too generally planted with little regard to system at first, and gaps which occur afterwards are supplied with little better taste. As the arrangement of the plants cannot be rectified during the season of growth, the best method of proceeding is to name them carefully as they come into flower, and to make memoranda of their height, colour, season, and other peculiarities. With the assistance of this information any cultivator may make a collection of herbaceous plants both beautiful and interesting. Carnations and Picotees have suffered much during the past winter, those which escaped should be potted forthwith. I know of nothing better to grow them in than two parts virgin loam, one part decomposed horse manure, and one part sharp river sand. In this simple compost, with occasional doses of weak liquid manure during the growing season, I have seen them flourish and produce an excellent bloom. Tulip seed may now be sown, covering slightly. Nets may be kept over the main beds to preserve the foliage of the advancing plants from being cut by severe winds, or battered by hailstones. The surface of Pink beds may be moved and the plants top-dressed with rich compost. The same treatment will apply to Pansies. Polyanthus seed should be sown in pans or boxes, sheltering the plants as they rise, from the direct rays of the sun. Ranunculuses, as a matter of course, are all in the ground and the seed sown. Shelter both the beds and seeds from excessive wet.

GREENHOUSE AND CONSERVATORY.

Now is the time to commence ascertaining whether there is a sufficient quantity of plants for the decoration of the conservatory during the summer and autumn. If this is attended to at once, very much may yet be done towards making good any deficiencies that may happen to be discovered, for it is not yet too late to provide multitudes of showy plants for blooming early in autumn. Young plants of Alismandas, Clerodendrons, Torenias, &c., and many other things, if encouraged with a brisk bottom heat and other favourable circumstances, will form good-sized specimens in a few months; and large masses of Statices, than which few plants are more useful, will under kind treatment be obtained in a very short time. Cassia corymbosa is a useful plant and should not be overlooked when other plants are scarce, as it grows very rapidly and produces a long succession of bright yellow flowers. Those, also, who possess Balsamina Jerdoniæ should encourage it by every possible means to make wood and propagate as quickly and freely as possible, for it is just the plant that is wanted for autumn decoration. Then there are numbers of useful plants that may be raised from seeds, as Thunbergias, Ipomæas, Cockscombs, Balsams, Lobelias, &c.; and cuttings of Fuchsias made of young wood will root in warm sand in little more than a week, and may be grown into fair-sized specimens by July. Give free ventilation when cold winds can be avoided, and be cautious in the use of fire heat, dispensing with it on all possible occasions; indeed, it will henceforth scarcely be required, except to ward off too sudden a depression through frosty nights. Where gay Azaleas, Rhododendrons, and Roses are kept by themselves, a canvas screen should be immediately put in requisition in order to retain those charming flowers. When such is the case a very small amount of atmospheric moisture will suffice.

STOVE.

Increase atmospheric moisture considerably, not, however, in sudden clouds of steam, but steadily and permanently. Some slight shading with the Orchids may be necessary from 11 A.M. to 2 P.M. on very sunny days. When, however, the sun only breaks out at intervals, prefer giving more air and increasing in a very high degree the moisture of the air.

PITS AND FRAMES.

Verbenas, Calceolarias, shrubby Anagallises, Antirrhinums, Scarlet Pelargoniums, Fuchsias, Petunias, and all cuttings of half-hardy plants will strike in little more than a week in a sweet bottom heat of 75°.—W. KEANE.

DOINGS OF THE LAST WEEK.

On the morning of Thursday last we had rather unexpectedly a heavy fall of snow; and in one respect we were glad to see it, as along with the frost of the succeeding morning, it put a stop to ground work for a couple of days, and enabled us to proceed with cleaning sheds, washing pots, remedying defective glass in sashes, potting in stokehole sheds where all was warm, and changing bedding plants into cooler quarters, where they could be almost left to themselves until planting-out time. We also went on propagating by cuttings what we wished to increase, and pricking out lots of small seedlings in shallow wooden boxes, which we find the easiest to manage and the easiest and most economical to obtain. All such work will, as a general rule, be best done according to the comfort of the workmen. A man, however well disposed, cannot do such delicate work as pricking off small seedlings with the points of his fingers like so many points of ice. We have not yet had a properly heated workshed for such purposes, and therefore take advantage of sheds where there is a furnace; but so well is this matter now understood, that many of the proprietors of even small nurseries are quite as particular in having their working sheds heated by hot water in winter as in applying it to their glass houses. It is certain there is no excuse for dilatoriness, idleness, or beating hands and arms for warmth when such comfort is provided.

KITCHEN GARDEN.

The mild day of the 18th brought all our usual work in full force upon us. Where the main crops of Onions have not been sown no time should now be lost, and a principal sowing of Carrots should also be made. Parsnips do well sown even in February. Beet, Salsafy, and Scorzonera may also be sown where a few run heads are not feared. For a uniform level crop it is as well to defer sowing to the end of the month or the beginning of April. The ground is yet so cold that it is hardly warm enough to encourage germination except in the hardiest seeds, as Peas and Beans, of which successions should be put in. Early crops of these suffered a little from the frost of the morning of the 17th, but not, we trust, enough to hurt them.

We pricked off a lot of small plants of *Celery* into small wooden boxes, and placed them in a shady place in a vinery at work. We generally sow Celery twice or thrice, but we must confess that we do this more as a custom than from any absolute necessity. The general idea has been that small plants which are fit to be pricked off into a little heat in the middle of March, are sure to throw up their flower-stalks in July, August, and later, whilst plants from seed subsequently sown, and fit to be pricked off in April and May, are comparatively safe from bolting. The result of our experience and observation is, that plants properly looked after, the roots kept from being dried up, &c., and that are pricked off now, are just as safe from bolting as those pricked off two months later. We have often had in March good beds of Celery without a bolted head, although the tiny seedlings had been pricked off in the March of the previous year. When we had very early Celery,

and consequently sowed at the end of December or the beginning of January, we could have counted on our fingers all the run heads in July, August, and September. The treatment given, so as to prevent stagnation of growth, will have more effect in preventing bolting than the mere time of the successive sowings. Very early Celery requires much attention before planting out. That which is pricked out towards the end of March will want but little care comparatively, except to be gradually hardened off. We generally give the most forward the benefit of a glass sash for a time, before finally transplanting.

FRUIT DEPARTMENT.

As the snow covered the roofs of our *orchard houses*, and as with all our care we discovered some traces of the Aphis persicæ, in comparison with which the green fly is a trifle, we smoked the houses well by smothered burnings of bruised Laurel leaves. They must have strong constitutions that would withstand such treatment. The scent of the smoking was strong and disagreeable at a good distance from the houses, as, notwithstanding the snow covering, some of the smoke and fumes escaped from the front. Care must be taken by damp coverings of moss, &c., that the leaves bruised and broken along with small twigs, do not emit flare or flame, as that might be dangerous. We have not found an insect alive after the infliction, but of course the smoking would have little or no effect on the unhatched eggs. At this early season, however, the young are often produced alive, or viviparous, like little ropes of Onions, and not from eggs deposited, and therefore killing the old ones is of extra importance.

We stated lately that the floor or surface soil of these houses had all been scraped off to the depth of say half an inch. This also is so far a security against insects. As a whole the ground beneath was hard and rather dry. In the snowy and frosty days alluded to, the surface soil of the pots in one house was picked off, and a fresh rim of turf put round, and fresh rich compost added. The turf rims, some of them resting on the ground, were formed of pieces of rather thin turf doubled in upon themselves, so that the grass should be inside and the earth of the turf outside. This prevents the grass showing itself, whilst it gives toughness to the rim thus formed, so as to last for the season. We like these very well. Where turf cannot be had conveniently, zinc rims are very useful, look neat, and take up but little room; say strips of zinc from 2½ to 3½ inches deep, and cut with zinc scissors to the requisite length, so that the ends merely cross each other where they meet inside the rim of the pot. One advantage of such zinc rims is, that many of our soft-skinned molluscs decline to climb over the zinc. Having thus attended to the pots, we broke the surface of the soil with the points of a fork, just a little less than half an inch, so that water should be absorbed more equally, and then watered where dry with weak sewage. We next covered all over with about an inch of rotten dung, in which a little lime was mixed, and scattered over that fresh dryish loam, so as to give all a clean, fresh appearance. The reason for adopting these processes in succession was first to secure the roots from being too dry, not watering where it was moist enough, or where pots needing water had stood through the winter; and secondly, to secure a comparatively fresh, dry surface in the house when the trees are in bloom, as those against the wall are now opening their flowers. The dry surface will be all in favour of the bloom, and also be a safeguard if we should have severe frost in the mornings.

Strawberries in the fine sunny days are now of a good colour and fair for flavour. We have plenty of places in which we can bring the plants on to the flowering period, but we are scarce of room where there is the proper slope and light to set the flowers well, and therefore when the plants have set a sufficient number of fruit we often move them to swell and ripen, but even then the flavour will be in exact proportion to the light and requisite ventilation given. On these accounts our best makeshifts in houses where the Strawberry may be considered as a stolen or extra crop, will not equal the results to be obtained in a Strawberry house set apart for the purpose, and built with an inclination to all the direct sunlight possible in March and April. For general management see previous weeks' notices.

ORNAMENTAL DEPARTMENT.

The snow has greatly benefited the new-laid turf. When we can manage to finish such work in March, we do not expect to have the turf watered afterwards. But for the damp in the ground we would have soaked some turf laid before the snow, as it had become dry from exposure after being taken up. This dipping is worth many waterings; and though such a practice is anything but to be commended, we have, by immersing the turf in a tub of water, laid it successfully at midsummer.

Turf Pots.—A lot of turf taken up from 2½ to 3 inches thick was cut into squares of about 3 inches each way, a hole was scooped out in the centre, and Geranium plants taken from boxes put one in each piece of turf along with light rich soil, the turves placed close together on leaves, then rotten leaf mould strewn between them, watered, and protected with old sashes, mats, &c., at first. These plants generally turn out well and never suffer from the removal, the roots hanging all round the turf. Our turf this season is rather light, sandy, and sweet—all the better.

Propagating by Leaves.—In propagating, for details see previous numbers. We repeat what some anxious ones may have forgotten, that the leaves of many plants will soon strike and form plants. Most leaves of plants will form roots, but there the matter rests, they will not form a stem. Many fleshy succulent leaves will form both roots and stems. For instance, this is not only the case with Gloxinias, fine-leaved Begonias, &c., but every piece of the leaves when cut up into shreds, especially if they have a piece of vein or midrib at their base, will soon form independent plants. We have thus soon had a dozen little plants from a single Begonia leaf. The fine-leaved Coleuses are often scarce in spring, though wanted by scores or hundreds in summer. The cuttings, of course, strike freely in heat, but the difficulty often is to obtain enough cuttings where the keeping means of a dry heat are wanting in winter. In such a case every leaf becomes available. We have not yet tried slitting the leaves into so many shreds, and inserting them as cuttings; but whole leaves inserted by part of the footstalk and part of the base of the leaf round the sides of the pot in sandy soil, soon form a protuberance, from which roots are produced; ere long a little stem rises, so that ultimately one would not know the plants raised from the leaves from those raised from cuttings. There is this difference, that the cutting, however small, makes a plant much sooner than a leaf. When the first-struck are potted off it will be no long time, if growing in a moist heat, before they will bear topping for cuttings and leaf-propagation. Now is the time to secure in such cases freedom from insects.—R. F.

TRADE CATALOGUES RECEIVED.

Bell & Thorpe, Paddock Nurseries, Stratford-on-Avon.—*Select Seed Catalogue.*

George Yates, 31, Little Underbank, Stockport.—*Descriptive Catalogue of Vegetable and Flower Seeds.*

Hugh Findlay, West Netherton and West Shaw Streets, Kilmarnock.—*Catalogue of Forest and Ornamental Trees, Shrubs, Fruit Trees, &c.—Catalogue of Florists' Flowers and Bedding Plants.*

J. Coombs, The Ferns, Enfield, Middlesex.—*Catalogue of Cuttings of Geraniums, &c.*

James Dickson & Sons, 102, Eastgate Street, and Newton Nurseries, Chester.—*Catalogue of Farm Seeds.*

Downie, Laird, & Laing, 17, South Frederick Street, Edinburgh, and Stanstead Park, Forest Hill, London, S.E.—*Descriptive Catalogue of Florists' Flowers.*

TO CORRESPONDENTS.

*** We request that no one will write privately to any of the correspondents of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By doing so they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely to The Editors of the Journal of Horticulture, &c.*, 171, *Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

CHEAP GREENHOUSE (*A Reader*).—So say we, Why do not advertisers state the price of the different sized houses? In "Greenhouses for the Many" and in our pages you will find out for what houses may be put up, with a little ingenuity and work on the part of the owner. A portable house is what would suit you. We can hardly tell you how best to lay out £20 without knowing exactly what you want. Anyone who advertises portable houses in our columns would give you the necessary information, especially if you sent a prepaid envelope for reply. It is a mistake to advertise and not give prices.

Washing Rose Trees (*An Old Reader*).—We do not recommend the practice of washing Rose trees in the spring, when the young buds are just starting, with any of the insecticide compounds, as Gishurst, Clarke's, Fowler's, Abyssinian mixture, *et id genus omne*, as there is more probability of injury being done to the buds than good by the destruction of the eggs of insects, &c.; but we do strongly recommend constant syringing during the growing season with pure rain water, to which has been added a small quantity of soft soap and clear soot water. A strong mixed solution of the latter can be kept in an earthenware pancheon, and added, when it is settled, to each canful of water, which is used in syringing. This treatment will both invigorate the plants and keep them free from aphis and mildew. Whenever honeydew is seen on the leaves look carefully on the upper shoots for aphis, as honeydew is almost invariably the deposit of aphis, and it is altogether a mistaken notion that the aphis comes to feed on the honeydew, as the aphides are seldom, if ever, found on leaves much covered with honeydew, but the white cast-off coats or skins of the aphides will be found plentifully enough. The Rose weevil (worm i' the bud) requires hand-picking; the leaves are too much curled up by the insects for the syringe to remove them, though it will help to check their spread when soft soap is freely used with the water.

Rose Cuttings (*B. B.*).—The Rose cuttings put in last autumn under a north wall we would take up in April, place in small pots, and set in a cold frame, keeping close and shaded for a time, sprinkling them overhead every morning. When established and growing freely, plant them out about 18 inches apart in an open situation, in good rich soil well worked. The weakest we should put out 6 inches from plant to plant in rows about a feet apart, and in autumn you could move them to their final quarters. Allow them to grow at will this season. If inconvenient to pot the plants, leave them where they are until May, and then take them up carefully and plant them where you require, watering in dry weather.

Roses in India (*An Old Subscriber*).—The pruning and other treatment must vary with the latitude The Himalaya Mountains and Cape Comorin have totally different climates. An intelligent local native Mallee will manage the Rose—the Gul of India—better than we could advise. Speede's "New Indian Gardener," published by Thacker & Co., Calcutta, is the best book we know on Indian gardening, but it says nothing about Rose-culture.

Narcissus and Jonquil not Flowering (*A Subscriber*).—Probably they have increased by offsets to such an extent as to have become weak from the overcrowding, though we have not found such to be the case oftener than once in every two or three years. We advise you to take them up when the foliage turns yellow, and after well manuring the ground, to replant, removing the small bulbs, and planting only the largest size for flowering, but put in the smallest by themselves to gain strength. Replant the same day. It is not necessary to take up the bulbs every year; every second or third year is quite sufficient. Probably you have other plants amongst them in summer, and the effect is to shade the foliage before it is mature. We have known the foliage whilst quite green pulled off, in order to fill the ground with bedding plants, and yet such persons complain of the bulbs not doing any good.

Native Guano (*G. M.*).—We have no experience of the "native guano," but should not hesitate to use it, as your employer wishes it. We think Queen Pines 6 lbs. 6 ozs., 5 lbs. 6 ozs., and 5 lbs. extraordinary weights for plants ten months old. The Queen Pine a crown in November, 1869, and now in flower, we should consider satisfactory.

Annuals for Cut Flowers (*A. S. E.*).—Ten-week Stocks, Asters, Helichrysums, Phlox Drummondi, and Scabious in great variety are all fine, and so are Larkspurs, especially the Branching, Sweet Alyssum, Asperula azurea setosa, Centranthus macrosiphon and its variety bicolor, Chrysanthemum Dunnetti flore-pleno, C. hybridum flore-pleno, Erysimum Perefskianum, Leptosiphon androsaceus and its variety albus, Lupinus nanus, Nasturtium Tom Thumb scarlet, spotted, and yellow; and besides those you name, which are good, Heliotropes, Ageratum, Delphinium Barlowi and Bella Douna, Dianthus hybridus Marie Paré, D. hybridus multiflorus, Herbaceous Phlox, Salvia patens and S. splendens, Carnations, Picotees, Pinks, and Mignonette. Stokesia cyanea is not quite hardy, except in warm situations, and with protection in winter. It does well in the garden borders in summer. Michauxia campanuleides is a good border plant, but is apt to damp off in winter, to guard against which it should be planted in light soil well drained.

Pruning Ivy (*Amateur*).—In pruning Ivy it is proper to remove with the shears every leaf and shoot, so as to cut it close, and secure a close, even growth. All the leaves, whether with long or short stems, should be cut off. The leaves with short stalks are last year's late growth, and these with long stalks are partly last season's early growth, and partly the late growth of the previous year, but as a rule the long-stalked leaves are rendered so by their having to elongate to reach the light, in consequence of their being covered by the young growth. Ivy sheds its leaves about July.

Cedar of Lebanon Transplanting (*A. E. F. C.*).—Now is a good time, indeed better than autumn, to move a Cedar of Lebanon, especially as it has been sheltered in the kitchen garden, and is to be moved to an exposed situation. Take it up carefully, preserving as many of the roots as possible, and lifting with a ball of earth. Water if the weather prove dry, but do not make the soil a sour mass from frequent waterings. Good rich loam, especially that from decayed turf, is most suitable, or, failing that, the top 2 or 3 inches of a pasture chopped up is excellent. Trench the spot two spits deep before planting, making a circle with a 3-feet radius, or a circle 6 feet in diameter. It is well to keep that for a few years free of weeds. Stake securely.

Sowing Cucumbers, &c, for Exhibition in August (*Dynnewydd*).—The Cucumbers should be sown at the beginning of April, the Melons between now and the 1st of April, the Broad Beans at the end of April, and the Peas in the first week of May. As these crops are dependant in a great measure on the weather as to the time of coming in, and the kinds vary in their periods of ripening or attaining a condition fit for table, due allowance must be made. There should be more than one sowing of the Beans and Peas.

Vine Disbudding (*West Cumberland*).—The Vines on the spur system being pruned to two eyes is quite right. Wait until you can distinguish the bunches at the points of the shoots, and then, if the lowest shoot show fine bunches, remove the uppermost shoot on each spur, and if there should be no fruit on the lowest shoot but on the upper, leave both, and the upper one, when it has fruited, can be cut clean out, and that not fruited pruned to two eyes. In this way you can keep the spurs short. When all the eyes are fairly started, and especially the lowest eyes, the rods should be tied in the position they are to have during the season of growth.

Melons, Planting in a Pit (*Vicar*).—One plant under each light would be a sufficient distance for the plants to be trained to a trellis.

Seedling Variegated Pelargoniums Losing Colour (*V. Z. P.*).—We think it is owing, as you think, to the fierce rays of the sun, for during very bright hot weather under glass they lose colour. Could you not afford a slight shade in hot weather, say from 9 A.M. to 4 P.M.? Tiffany answers very well, and we think pits are better than houses for all plants of such size that they can be moved into them in summer. They are, as a rule, more moist, and the pots are not so much exposed to the sun as those in larger structures.

Shrubbery Borders (*A Cottage Gardener*).—For such a place we do not think you would gain anything by wiring your dwarf walls, as nothing would thrive against them. Nothing would suit better than banks of Rhododendrons if the soil answered. As you speak of Chinese Arbor-Vitæ, we think that six of such plants would be enough for each side, three in each triangular space, and the other side might be the same as you suggest. Beginning at the house, then, we would plant six shrubs as follows:—Three in each triangular space—thus, Chinese Arbor-Vitæ, Cupressus Lambertiana, Thujopsis borealis, Cupressus Lawsoniana, Thujopsis gigantea, and Juniperus chinensis. The intervening spaces we would fill with green and variegated Hollies and Arbutus, fronting with the best varieties of Berberis mixed with Aucubas. The front wall of the house to the north we would cover with Cotoneaster microphylla and the scarlet Pyracantha, both very hardy and beautiful, and the borders we would chiefly plant with Laurustinus, bordered with Cistus, Daphne Cneorum, and dwarf hardy Heaths, as Erica herbacea, carnea, &c.

Abronia umbellata (*D. M.*).—It is a half-hardy annual of trailing habit, attaining a height of about 6 inches; flowers pink or rosy lilac, from June to October. It is anything but new, having been introduced in 1823 from California.

Scotch Fir, Austrian Pine, and Spruce near the Sea (*A Young Beginner*).—The specimens you sent us are certainly destroyed or scorched by the sea spray. Scotch Fir, though succeeding a short distance inland and in the most exposed situations, does not thrive very near the sea. Austrian Pine, however, is one of the best evergreen trees for situations near the sea, but we have no experience of it within a hundred yards of the sea and within reach of the sea spray; it does well in a glen on the east coast not 300 yards from the sea. Spruce is of no use so far as we have experience, and we have abundant testimony of its being unsuitable. At a few hundred yards from the sea we have Austrian Pine, and Corsican Pine, the latter probably the quickest growing of all the Pines, and superior to either Scotch Fir or Austrian Pine for rapid and straight growth). Maritime Pine and Chinese Juniper are good. Of deciduous trees, most of the Maples succeed, especially Sycamore. Ash does tolerably well, Poplar, white-leaved; Pear (ornamental sorts), Turkey Oak, Elm, Thorns, Sea Buckthorn, Elder, common and scarlet-berried; and Guelders Rose. There are others that do well in more southerly parts, but the above are what we find succeeding north of the Humber.

Growing Vines (*R. S. S.*).—We approve of the principle of grafting Vines on hardy stocks, for which there need not be any very expensive border-preparation. The writer you allude to is not a grower of Vines for sale—*i.e.*, not a nurseryman. You may grow Vines as well as plants in a greenhouse, and have good Grapes for home use. Three good sorts are:—Frankenthal, Trentham Black, and Foster's White Seedling. Being ignorant of Vine culture, the "Vine Manual" would suit you. It may be had by post from our office if you enclose 2s. 7½*d.* in stamps with your address.

Soil for Caladiums—Chrysanthemum Cuttings (*J. B.*).—The most suitable compost for Caladiums is light fibrous loam two parts, one part sandy peat, one part well-decomposed cow dung or hotbed manure, a sixth part of silver sand, and the same of charcoal in pieces from the size of a pea to a walnut; the whole well incorporated but not sifted. Good drainage is necessary. Chrysanthemum cuttings may be struck in any house with a gentle heat, but with most certainty in a gentle hotbed, and at this time of year it is desirable. Remove them immediately they are rooted to a cool house or cold frame.

Perilla and Petunia Seed not Germinating (*A Subscriber, Somerset*).—We can only conclude that the seed was bad, but we would try again. For some years past there has been a great per-centage of bad seed, especially of Perilla, but with last year's fine weather we may calculate on finer samples with a higher per-centage of good. Do not cover the seed more than its thickness with very fine soil, water no more than sufficient to keep the soil moist, shading from very bright sun so as to lessen the necessity for watering, and keep the seedlings near the glass, the nearer the better so long as they do not touch it.

Fermenting Material for Pit (*Subscriber*).—We presume you require the pit filling to afford bottom heat to the plants grown on it. Stable dung properly prepared by being thrown into a heap, sprinkled with water or the drainings of the dunghill if at all dry, and turned over two or three times at intervals of a few days. Leaves are good, but they need not be Oak leaves; we have found Beech excellent.

Arundo Donax (*G. B.*).—This graceful plant flowers in the conservatory usually in July, and from the strong growths of the current year.

Boiler (*F. M.*).—We find all boilers have the defect you complain of—viz., "Consuming coal wonderfully, and, if set in brickwork, often needing rebuilding." However, there is a considerable difference. We are using a wrought-iron multitubular, and it answers admirably, but compared with yours, we do not think there is any great difference as to fuel-consumption. Ours is not a patent. It is on the principle of the steam-boiler.

Ficus elastica Propagation (*Idem*).—We find no difficulty in propagating this plant by cuttings. We usually take off the points of the shoots at this season with two or three joints besides the growing point, cut below the lowest joint, and insert the cuttings singly in small pots without removing any of the leaves, save those on the part inserted in the soil. The cuttings are allowed to dry the wound before insertion, and then they are put in sandy peat and loam, and placed in a bottom heat of 75° to 80°, and covered with a bell or hand-glass. They do not need much water, only just keeping moist. It may also be increased

by eyes of the ripe wood, put in the same as Vine eyes, and placed in brisk heat. They, also, should be allowed to dry before insertion.

Inarching Vines (*Idem*).—The best time to inarch last year's canes to old Vines, is as soon as the stock or old Vines have shoots a few inches long with leaves to attract the sap, and so prevent bleeding. The scions are also better of some growth. No union can take place until there is growth, as it is effected by the descending current or elaborated sap.

Indianrubber Plant not Thriving (*E. S.*).—The plant is not thriving from its being recently repotted and kept in a room. It would do better in a greenhouse, and better still in a house with a moist atmosphere, and a temperature of 55° to 60°; a vinery at work is what it needs. It would have been better had you not potted it until it began to grow. Though first-rate for a room, it should be removed to a moderately warm house to make new growths, say from February to July, or August, and may then be employed for room-decoration the remainder of the year, giving no more water than enough to keep the leaves fresh. A compost of two parts fibrous light loam, one part leaf soil, or well-rotted manure, with a free admixture of sharp sand will grow it well.

Insects on Forced Strawberry Plants (*Rev. E. D. K.*).—The small white flies which infest the leaves of the Strawberry plants in your hothouse are a species of Aleyrodes, closely allied to the Aphides and Cocci (A. vaporariorum *Westw.*). As they undergo their transformations on the under sides of the leaves they are difficult to be reached by any fluid application, and we believe that only repeated smoking will kill them in the winged state. Some years ago they were very troublesome in the houses of the Royal Horticultural Society at Chiswick, and were found most difficult to destroy.—I. O. W.

Names of Plants (*Otter*).—1, Pteris serrulata; 2, Pellæa hastata; 3, Cheilanthes hirta. (*Ella, Bath*).—Nephrodium molle, in a very luxuriant condition. (——).—Two specimens, 1 and 2, leaves only; we require flowers also.

POULTRY, BEE, AND PIGEON CHRONICLE.

SILVER-SPANGLED AND BLACK HAMBURGHS.

I was glad to see a letter a week or two ago upon Silver-spangled Hamburghs, for I feel sure that the only reason why they are not more popular in the southern counties is that they are not sufficiently understood. Dr. More, in his letter of February 16th, does not leave the matter very clear; and as all your readers may not have read Mr. Teebay's exhaustive article in the "Poultry Book," to which he refers, and which explains the whole subject most thoroughly, I will, if you will allow me, add a word or two to what Dr. More has said, setting him right on one or two points.

He says, "Mr. Tegetmeier (he should have said Mr. Teebay) is very decided as to the propriety of having pure Mooney blood on one or the other side if you wish brilliant plumage. Mr. Beldon also, I know, considers this a *sine quâ non* in the selection of stock birds; in fact he has informed me he prefers the dark-necked cocks in all respects." Now this is only half the truth, for it should be distinctly understood that, to produce the beautifully spangled pullets which we see in the post of honour at our exhibitions, it is absolutely necessary to have pure Mooney blood not only on *one* but on *both* sides. Both the parent birds, cock and hen, must be pure Mooneys. Not all Mooney cocks, however, are hen-feathered; some, perhaps the greater number, have full-feathered tails. Nor is it the fact that all the best breeders use only hen-feathered cocks; but whether hen-feathered or long-tailed, they *must* be pure Mooneys. But pure Mooneys of either sex very rarely have pure white earlobes, or the cocks—*i.e.*, the long-tailed cocks, clear tails; and both these are points which the judges consider imperative in "exhibition cocks." So to obtain them we must look elsewhere, and this is the object of crossing with the Silver Pheasant. Our exhibition cocks, therefore, are bred either from a Mooney cock with a half-bred Silver Pheasant hen (I say half-bred, for I fancy there are very few pure Silver Pheasants left, most of them having been crossed with the Mooneys), or from this same sort of hen and a Silver Pheasant or half-bred—*i.e.*, exhibition cock. Formerly, when light-coloured cocks were the fashion they were usually bred in the latter way; but since the judges have taken to give the preference to cocks with heavier spangling I believe the former mode is the more usual, it being difficult to obtain a sufficient depth of marking from a Pheasant cock. As to size, Dr. More is again only partly correct, as, though Silver Pheasant cocks as a rule are larger than Mooneys, yet on the other hand with respect to the hens the contrary holds good.

It will be seen from the above that Silver-spangled Hamburghs may be bred with success even by those who have not the convenience of two yards—viz., by keeping a Mooney cock and allowing him, say, half a dozen wives, part of them being pure Mooneys, and the others pure or half-bred Silver Pheasants. At the same time, where it can be managed it is better to have two yards, and keep the two strains distinct.

It does seem anomalous that at poultry shows, where the judges are required by the rules to look especially for "purity of blood" in making their awards, the prizes should be given to "half-bred mongrels." Still, as long as the present fashion lasts I do not see how it can be helped; and there is no denying that the pure white earlobe and clear tail greatly enhance the beauty of the bird.

With regard to Black Hamburghs, I have noticed with astonishment, in your answers to some correspondents, your advice, or rather encouragement, to them to breed them from a mixture of Spanish and Golden-spangled Hamburghs, or Black Hamburghs and Black Game. Such attempts might be interesting as experiments, but I cannot imagine anyone in his senses setting to work to breed Black Hamburghs up to their present standard in either of these ways. I should not envy him his task. They may be called a "manufactured breed," but I fancy they can boast of a longer pedigree than many of the present fashionables, Brahmas to wit.

One of the most experienced Hamburgh breeders in the kingdom has told me that he remembers seeing Black Hamburghs in Lancashire when he was a boy, which must be something like forty years ago; therefore they are not birds of yesterday. There is no doubt that many of them were crossed with the Spanish some years ago, but the same authority tells me that the object of doing so was to give them greater size. Their liability to white face is not of itself a proof of Spanish origin, because all varieties of Hamburghs, Pencilled and Spangled, are liable to this same defect, though perhaps not to so great an extent as the Black. I have bred, I dare say, nearly a thousand chickens of this variety, and out of them all I never had but three with single combs. This does not look as if their origin had been very recent. I fancy your correspondent who is setting to work *de novo* will have to persevere for many seasons before he attains to such uniformity.

As to hardiness, there is no question about that. They are much hardier than any other variety of Hamburgh. In fact, I believe that they are the most profitable breed anyone can keep; in point of utility at all events, though not perhaps as regards exhibition, for they do not command the same fabulous prices as Cochins, Game, and Dorkings. Good birds, however, will always realise good prices; and now that they have separate classes allotted to them at all the best shows their popularity seems to be increasing very fast.—Shropshire Rector.

BLUE DUN GAME FOWLS.

In reply to "A Young Beginner," I beg to observe that the "Dun Game fowls" are by no means extinct yet. I have four Dun Game hens in my own run—two Tassel Dark Blue Duns, and one Brown Red Blue Dun; also a Ginger Dun hen. One of the Tassel Dun hens is also from Brown Red blood. I have no Blue Dun cocks, they being more difficult to breed than the hens are. I have met with both Red and Blue Dun Game fowls in Norfolk, Lincolnshire, Yorkshire, Warwickshire, and Suffolk; but they are not very common. The Red Duns in Warwickshire are splendid birds for high courage, and no Game fowl is gamer than a good white-legged, red-eyed, blood red Dun cock.—Newmarket.

HANDLING FOWLS AT POULTRY SHOWS.

All fowls at exhibitions should be carefully handled, and the right way to hold them, in my opinion, is to grasp the wing and thigh in one firm, but gentle and strong grasp, the thumb over the wing, and the fingers under the thigh, which is the most secure way of holding any fowl, Game or not. Game fowls should be handled when judged, or you cannot tell whether they possess the requisite hardness of flesh. I quite agree with Mr. Hinton, of Warminster, that sticks should not be admitted into poultry exhibitions, though required at cattle and pig exhibitions.—Trevor.

OUTRAGES ON PRIZE BIRDS.

Under this heading you have lately had several communications from correspondents, whose birds have lost sickle feathers in going to, at, or returning from various poultry shows, and I think in every instance the secretary and committee have been blamed for not looking better after the birds, and preventing such malpractices. Now, I think the blame is placed on the wrong shoulders, and the fault of the birds' sickle feathers being broken rests more with the railway officials. When the birds are packed after a show, and delivered at the railway station, the baskets are opened to see that the birds are

alive; they are then fastened down, or are supposed to be so fastened, and are forwarded to their destination; on arriving at, we will say, Warminster, the basket is again opened to see that the occupants are all right. This is the way in which I believe the mischief occurs, for I have had many baskets returned to me not fastened at all (and some of my birds have had broken sickle feathers), but I cannot believe they were sent from a poultry show with the hampers unfastened. As Mr. Hinton's birds seem to have suffered the most, I should certainly think some local fancier has taken a liking to his Malay cock's tail feathers. However, I can tell him that after our last Bristol show the hampers were certainly opened at the Bristol railway station, but I must leave it to him to find out if the basket was opened at Warminster before being delivered. What fancier will start a patent fastening for the baskets? One correspondent says, Padlock them, and send the key to the secretary, of course keeping another to unfasten the lock upon the birds' return. This I hardly think would answer, but I will leave it in abler hands than mine to suggest a remedy.—GEORGE TONKIN, *Bristol*.

THE letters in your last number will probably create an impression in the minds of your readers that there was a want of care, if nothing worse, on the part of the Committee of the late Show at Colchester, and on their behalf I trust you will give me, as Secretary, an opportunity to state the means we adopted to prevent any unfair treatment of the birds whilst under our care. Some of the members of the working committee were present during the whole time of the show, day and night, in addition we had seven trusty and experienced servants in the Exchange whilst the show was open. None of these men were interested in any breed of birds, as we purposely avoided having anyone who had a connection with the fancy in any way. Also, when the public were present, we had policemen in plain clothes, one stationed near where the Pigeons were placed, as I could not see that part from the bottom of the building, and to all the instructions were not to allow any bird or animal to be touched or disturbed, nor any egg to be removed, except by an authorised person. I have every reason to believe these orders were carried out strictly.

In packing and unpacking, a committee-man was present when every bird was removed, and marked it on his catalogue. The show closed at 10 P.M., but every pen was emptied, except the local ones, and the hampers dispatched to the railway before we left the building at four in the morning; the London ones being sent off by the two o'clock morning mail. As far as we could see, every bird, with the exception of some Dorking hens that fought and were placed in separate pens, left the show uninjured. Mr. Dean's birds I packed myself, and saw no blood on them, neither were my hands soiled with blood, as they must have been had his bird been injured as he describes when I packed it.

We hoped, after all our exertions, that the show would have passed off well, and without any complaints; but if any exhibitor can inform us in what way we could have done more to protect the birds entrusted to our care we shall be obliged, as we hope to have another show next year, and will endeavour at any cost to carry out suggestions which may contribute to the safety and well-being of birds sent us.—HENRY LAVER, *Honorary Secretary*.

THE DYED BANTAM COCK AT THE NORTHAMPTON SHOW.

As your report of the Northampton Show in last week's Journal stated that the dyed Duckwing Game Bantam cock was exhibited by us, we trust you will allow us to give a most unqualified contradiction to the charge. We fearlessly assert that the Bantams we sent to Northampton never had a feather touched, either as regards dyeing or trimming, prior to their leaving us. They left us on Tuesday, March 7th, at 9.15 A.M., and did not arrive home again until Tuesday, March 14th, at noon, and of course it is impossible for us to say what may have been done to them during the week they were away. That there has been some gross mismanagement or carelessness in penning the birds (whether wilful or not is not for us to say) is self-evident. Mr. Newbitt, who exhibited Pigeons, sent a post-card to the Secretary, and asked him to say what we had in Class 19. To this the Secretary wrote as follows:—"185. None came." This was written on the afternoon of the first show-day, when "one of the committee found" our "pen empty." All our inquiries have failed to draw anything further from the Secretary than that our Bantams were placed in pen 187. We cannot learn whose birds were shown in pen 185. The birds shown in pen 187 were sent to Mr. Swift, but the Secretary says in a letter to us, "We have found a pair of Bantams in one pen (query 185) and your skep opposite an empty one; and he "decided to keep them until he had written" to us. Now, if these birds were found in pen 185, why were they not duly sent to us, when our hamper appears to have been the only one remaining? Why did the Secretary decide "to keep them?" At his request we sent a description of the birds belonging to us, and finished our description by saying, "The cock is rather patchy on the saddle, having a few brown feathers, not having got quite through the moult." Truly this could not be, if the cock's saddle had been dyed "a lovely yellow." We are prepared to send the bird for examination to Mr. Hewitt, Mr. Tegetmeier, or to the Editors of the Journal. We invite the strictest investigation into this (to us) most painful affair, as most assuredly we stand guiltless. We have submitted the bird for the inspection of several local fanciers who fail to discover, after the closest scrutiny, the least particle of dye, except such as has been placed there by Dame Nature herself. We beg to state, further, that the description of our birds was sent to the Secretary long before we heard or saw anything respecting a cock being dyed, as he (the Secretary) was ominously silent about it until we had acknowledged the arrival of our birds.—HUDSON & BURNIP, *Epworth*.

[We received our information from Mr. Humphreys, the Secretary. Who dyed the cock? and was the dyed cock that which was returned to Messrs. Hudson & Burnip? are now matters in dispute.—EDS.]

WOODBRIDGE POULTRY SHOW.

THE first open Show was held at Woodbridge, in the Lecture Hall, on the 16th and 17th inst. There were about five hundred entries, for the accommodation of which there was scarcely sufficient space. The pens (Turner's) were well arranged, yet they were in some instances three tiers high, to the evident disadvantage of some of the birds. Every attention was paid to the specimens placed in the hands of the Hon. Secretary, Mr. Drake, and they were well attended to as regards food and water. One or two of the cage birds were found dead on opening the cases, and we observed a Bullfinch pine away and die during the Show, and a Linnet Greenfinch Mule looking as though it would not get home alive, but nothing that could be done to save them was omitted. We should advise exhibitors not to send double tins attached to the cages, for with these it is impossible to keep the seed dry.

For *Dorkings*, the first prize was given to well-known Rose-combed birds, and the second to a capital pen of young birds. The class was of unusual merit for the time of year, when many of the best birds are breeding. *Spanish* were more numerous than the Dorkings, and some of the birds were of high merit, though some of them had to be fed by hand, being unable to see. There were two classes of *Cochins*, and both colours were well represented. In the Buff the cup was won easily, the hen being very large, and well developed in fluff and cushion, and the cock one of the best we have seen for some time. In the Partridge and other colours there were some good birds, the cockerel in the first-prize pen being perfection. The second prize went to Whites, and these were also very good. Dark *Brahmas* were an excellent class. The cockerel to which the cup was awarded was of unusual merit, and perfect in colour of plumage. Some of the other pens contained excellent hens, but the cocks were not of the same quality. Light Brahmas are looking up, and were it not for the slight yellowness of plumage, we might pronounce them perfect. In *Game*, the Duckwing cock in the first-prize pen was most handsome, but the hen not equal to him, otherwise the award of the cup would have been made to this pen instead of to the Brown Reds, to which it was given. They were about the most close-feathered we have ever handled. The *Hamburgh* classes were all good, and the cup awarded to the Silver-spangled, which were perfect. Gold-pencilled were first on the list. The first-prize pen, an adult cock and a pullet, were perfection in all points. The second were young birds, the pen losing only by a slight deficiency in the earlobes of both birds. Pen 89, highly commended, contained a grand cockerel, with but one fault, that of the tail, which was too high-coloured, though their chance was entirely destroyed by the openness of marking of the pullet, which was almost as coarse as spangling at the ends of the feathers. In pen 82 the cockerel had shrivelled earlobes, a red tail, part of which was out, and the breast was unevenly blotched with a lighter colour. The pullet had a plain tail, and not a single clear pencil mark on her, the colour of the body being mingled with the marking. In the Silver-pencilled only the prize birds were noteworthy, but the Gold-spangled were mostly good, the winners being only superior in the spangling on the neck and tail hackles of the cocks. In *Polands*, Silvers were first and Golden second, the lacing on the wings of the latter being something marvellous, though the former were superior in crest. French fowls were a fair lot, Crève-Cœurs being first, and La Flèche second. In the Variety class a good pen of Malays were first, and Black Hamburghs second. Game *Bantams* were a large class. The first and cup was awarded to a gamey-looking pen of Black Reds, which distanced all others, being faultless. The second-prize birds were also of that colour, the cockerel perfect, but the pullet a little mossy. In Bantams Black or White, the first and second-prize birds made a close run for the first position, both pens being all that could be wished for, the only turning point being the smallness of the first-prize pen, to which the cup was given. In the class for other varieties of Bantams, Laced won both prizes, the Silvers being of high merit in colour and lacing, although a little larger than the Golden pen, which was placed second. In the Selling classes the cup for cocks was given to a Brahma, and in hens to Silver-pencilled.

We thonght the *Ducks* good in both classes, but best in Aylesburys, the first-prize pen weighing 19½ lbs.

The *Pigeon* classes were the smallest in number, owing, donbtless, to the time of year, which is altogether inopportnne for a show if nnmbers be expected. Mr. Yardley, who showed in great force, won the point cnp, scoring thirty-eight points to Mr. Jones's twenty-two. In Carrier cocks, both the winners were Blacks of high merit, bnt the Black hen shown by Mr. Yardley was the gem of the Carrier classes. In Ponters we were not struck with any special merit. In Tumblers, the first were Almonds of the highest quality, and the second Kites, very good in head, beak, and eye, and the first-named pen contained snch a hen as is rarely seen, she being perfection in head properties, and rich in ground colonr. Fantails were good, bnt evidently over-shown, and only the first pair of Owls, which were foreign Whites, were noteworthy. The first-prize pair of Red Jacobins were of the highest merit, being positively faultless, and the second-prize Blacks were also very good. The first prize in the Variety class went to Yellow Dragoons, which, in sknll, beak, and colour, were one of the best pairs we remember to have seen.

No portion of the Show was so keenly contested as the section for *Cage Birds*, Mr. Fenn winning the point cnp with fifty-four points out of twenty-two entries, Mr. Mackley coming second with fifty-two points out of twenty-eight entries, Mr. Walter thirty-two points ont of seventeen entries, Mr. Ashton forty-two points out of twelve entries, and it will thus be seen that in point of quality, regardless of nnmbers, Mr. Ashton stood first, Mr. Fenn second, Mr. Walter third, and Mr. Mackley fonrth, although some of the latter gentleman's birds, especially the Belgians, seemed somewhat harrassed with their journey. Both Jonqne and Mealy Norwich were well represented, the colour of some of the former being most intense, though several capital birds were rather loose in appearance. Some of the Belgians were very dirty, and much more inclined for sleep than to be put through their paces. The gem of these classes was the Buff bird belonging to Mr. Walter. In Silver-spanged Lizards Mr. Mackley's bird was good in all points; Mr. Ashton's second, although a little richer in colour, was much the smaller bird, the cap not being so well defined at the back. In Jonqne Goldfinch Mules Mr. Ashton was nnapproachable, for although there were many good birds in the class, none conld withstand these—No. 1, a four-pointed bird, evenly-marked; No. 2, four-pointed, but a little irregnlar. Both birds were a blaze of colonr, and the gems of this department. In the class for Mealies, a smart bird, perfectly clear, was first, and a perfectly four-pointed bird second. The class for other varieties of Mnles bronght ont the following, which won as placed—Linnet and Bnllfinch, Goldfinch and Bullfinch, Linnet and Canary, Linnet and Greenfinch, Siskin and Canary, and Greenfinch and Canary. In the Variety class a Loudon Fancy (Jonqne), was first, and a four-pointed Yorkshire second.

Dorkings (Any variety).—1, J. Martin, Claines, Worcester. 2, Henry Lingwood, Barking, Needham Market. *hc*, J. Smith, Shillinglee Park, Petworth (2); J. Frost; F. Parlett, Great Baddow (Coloured); Henry Lingwood; L. Patton, Hillmore, Taunton. *c*, F. Parlett (Coloured).

Spanish.—1 and Cup, F. James, Peckham Rye. 2, Nicholls & Howard, Camberwell. *hc*, H. Beldon, Goitstock, Bingley; J. Walker.

Cochins.—*Cinnamon and Buff.*—1 and Cup, Lady Gwydyr, Stoke Park, Ipswich. 2, Henry Lingwood (Buff). *hc*, Henry Lingwood (Buff); J. K. Fowler, Aylesbury (Buff). *Any other Variety.*—1, Lady Gwydyr (Partridge). 2, J. Sichel, Timperley. *hc*, Horace Lingwood, Creeting; J. Stephens, Walsall (Partridge).

Brahmas.—*Dark.*—1 and Cup, Lady Gwydyr. 2, W. Adams, St. Clements, Ipswich. *hc*, J. Watts, King's Heath, Birmingham. *Light.*—1 and 2, F. Crook, Forest Hill. *hc*, H. Dowsett, Pleshey; J. Pares, Postford, Guildford.

Game.—*Black-breasted and other Reds.*—1 and Cup, Miss M. Fletcher, Stoneclough, Manchester. 2, S. Matthew, Stowmarket. *hc*, Miss M. Fletcher (2); S. Matthew (2). *Any other Variety.*—1 and *hc*, S. Matthew. 2, Miss M. Fletcher.

Hamburghs.—*Golden-pencilled.*—1, H. Pickles, Earby. 2, H. Beldon. *hc*, F. Pittis, jnn., Newport, Isle of Wight. *Silver-pencilled.*—1, H. Beldon. 2, H. Pickles. *Golden-spangled.*—1, H. Beldon. 2, J. Walker. *hc*, N. Marlor, Denton. *c*, H. Pickles. *Silver-spangled.*—1 and Cup, H. Beldon. 2, J. Walker. *hc*, H. Pickles. *c*, Ashton & Booth, Mottram.

Polands (Any variety).—1, H. Beldon. 2, W. K. Patrick, West Winch, Lynn (Gold). *hc*, J. Hinton, Warminster (Silver); Lady Gwydyr (Gold).

French Fowl (Any variety).—1, H. Beldon. 2, W. Burrows, Diss (La Flèche).

Any other Variety.—1, Rev. A. G. Brooke, Shrawardine (Malay). 2, N. Marlor (Black Hamburghs). *hc*, J. Fawcett, Whitby (Black Hamburghs); W. Wildey (Andalusians); Lady Gwydyr (Silkies).

Game Bantams (Any variety).—1 and Cup, W. Adams (Brown Reds). 2, J. W. Morris, Rochdale (Black Reds). *vhc*, W. Adams (Black Reds); E. Cambridge, Bristol (Black Reds). *hc*, W. B. Jeffriee, Ipswich (Black Red); T. Fenn, Ipswich (Black Reds).

Bantams.—*Black or White.*—1 and Cup, S. & R. Ashton, Mottram. 2, E. Cambridge (Black). *hc*, H. Beldon; Rev. F. Tearle, Gazeley Vicarage (White). *c*, H. Pickles (Black). *Any other Variety* —1, Rev. G. F. Hodson, North Petherton (Sebrights). 2, M. Leno (Laced). *hc*, Rev. G. S. Crnwye, Crnwys Morchard. *c*, M. Leno (Laced); Rev. A. G. Brooke (Maltese).

Selling Class.—*Cock.*—1 and Cup, H. Dowsett (Dark Brahma). 2, Mrs. M. Seamons, Aylesbury. *hc*, H. Beldon; J. Watts (Brahma). *Hens.*—1, Mrs. M. Seamons. Extra 1, Lady Gwydyr. *hc*, H. Dowsett (Brahma); J. Watts; J. Sichel; H. B. Smith, Broughton, Preston (White Dorkinge); F. James; E. J. W. Stratford (Spanish).

Ducks.—*Aylesbury.*—1 and Cnp, Lady Gwydyr. 2, Mrs. M. Seamons. *hc*, J. Williams, Wrath-up-Dearne; J. K. Fowler (2); Mrs. M. Seamons. *Rouen.*—1, Mrs. M. Seamons. 2, J. K. Fowler. *hc*, L. Patton. *Any other Variety.*—1, M. Leno, Markyate Street (Viduata Whistling Ducks). 2, H. B. Smith (Carolinas). *hc*, H. B. Smith (Mandarins); M. Leno (Carolinae); J. Watts (Carolinas); S. & R. Ashton; F. Pittis, jun. (Black East Indian).

PIGEONS.

Carrier.—*Cock.*—1, F. W. Metcalfe, Cambridge. 2 and *hc*, H. Yardley, Birmingham. *c*, J. Philpott, Clapham. *Hen.*—1 and 2, H. Yardley. *hc*, F. W. Metcalfe.

Pouter.—*Cock.*—1 and 2, P. H. Jones, Fulham. *hc*, J. Walker; W. Nottage, Northampton. *Hen.*—1, H. Yardley. 2, W. Nottage. *hc*, P. H. Jones; J. Walker.

Tumblers.—1 and *hc*, J. Ford, Monkwell St., London. 2, P. H. Jonce.

Fantails.—1, H. Yardley. 2, H. M. Maynard. *hc*, P. H. Jones.

Owls.—1, P. H. Jonce. 2, H. Yardley. *hc*, J. Ford.

Trumpeters.—1, P. H. Jones. 2, H. Yardley.

Jacobins.—1, H. F. Wildey. 2, P. H. Jones. *hc*, H. Yardley; P. H. Jones. *c*, J. Percival, Peckham.

Nuns.—1 and 2, H. Yardley. *c*, P. H. Jones.

Barbs.—1 and 2, H. Yardley. *hc*, P. H. Jones.

Antwerps.—2, H. Yardley. *hc*, H. Yardley; J. A. Ransome.

Any other Variety.—1, A. W. Wren, Lowestoft. 2, P. H. Jones. *hc*, H. Yardley; H. F. Nalder (Turbits). *c*, H. Laver, Colchester (Silver Runts); J. A. Ransome, Ipswich (Silver Runts).

Selling Class.—1, Hon. Mrs. Paget (Starlings). 2, H. Yardley. *hc*, Rev. A. G. Brooke (Brunswick).

CANARIES.

Norwich.—*Clear Yellow.*—1, W. Walter, Winchester. 2, T. Fenn, Ipswich. *vhc*, R. Mackley, Norwich. *c*, J. Frost; E. Lulham, Brighton. *Clear Buff.*—1 and 2, W Walter. *vhc*, T. Fenn (2); R Mackley (2).

Norwich.—*Marked or Variegated Yellow.*—1, J. Close. 2 and *c*, T. Fenn. *vhc*, R. Mackley (2). *Marked or Variegated Buff.*—1, T. Fenn. 2, R. Mackley. *vhc*, T. Fenn; W. Walter. *hc*, C. Drake, Ipswich.

Belgian.—*Marked or Variegated Yellow.*—1, J. Baxter, Newcastle. 2, J. Close. *vhc*, R. Mackley. *hc*, W. Walter. *Clear or Variegated Buff.*—1, W. Walter. 2, R. Mackley. *vhc*, W. Harley, Bow, London; J. Baxter (2); W. Walter. *hc*, J. Close.

Lizard.—*Golden-spangled.*—1, R. Mackley. 2, H. Ashton, Polefield Hall, Prestwich. *vhc*, T. Fenn. *hc*, E. Lulham. *Silver-spangled.*—1, T. Fenn. 2, H. Ashton. *vhc*, R. Mackley (2).

Goldfinch Mule.—*Jonque.*—1 and 2, H. Ashton. *vhc*, T. Fenn; J. Baxter. *hc*, A. Webster. *Mealy.*—1, H. Ashton. 2, J. Baxter. *vhc*, H. Ashton; J. Baxter.

Mule (Any variety).—1 and 2, H. Ashton (Goldfinch and Bullfinch, and Linnet Mule). *vhc*, H. Ashton (Linnet and Bullfinch); W. Walter (Linnet and Greenfinch Mule); A. Webster, Kirkstall, Leeds (Bullfinch and Goldfinch Mule). *hc*, R. Mackley (Siskin Mule). *c*, A. Webster (Greenfinch and Canary Mule).

Canary (Any other variety).—1 and *vhc*, T. Fenn (Jonque and Mealy London Fancy, and Crested Yellow). 2, A. Webster (Evenly-marked Yorkshire). *hc*, E. Lulham (Variegated Yellow Crested Norwich); T. Fenn (Jonque Cinnamon); R. Mackley (Marked Buff Crested); T. Fenn (Jonque London Fancy).

Goldfinch, Bullfinch, or Linnet.—1, R. Mackley (Goldfinch). 2, W. Walter (Bullfinch). *vhc*, A. Webster (Bullfinch). *hc*, T. Fenn (Bullfinch). *c*, J. Baxter.

British Birds (Any variety).—1, A. Webster (Bramling). 2, T. Fenn (Siskin). *hc*, R. Mackley (Siskin).

Selling Class (Any variety Canary or Mule).—1, T. Fenn. 2, R. Mackley (Norwich). *vhc*, T. Fenn (Norwich) (2); R. Mackley (Norwich).

Foreign Bird (Any variety).—1, — Mackley (Red-faced Love Birds). 2, A. Webster (Java Sparrows). *vhc*. Miss E. A. Eeles, Southwold (Crested Cardinals); W. Walter; R. Mackley (Shell Parroquets).

The Judges were—for Hamburghs, Bantams, Pigeons, and Cage Birds, Mr. E. Hutton, Pudsey, Leeds, and for all other varieties, Mr. John Donglas, Clumber, Notts.

PENRITH POULTRY SHOW.

Few exhibitors wonld be prepared to find so greatly improved a Show as that jnst closed at Penrith. The new Market Hall possesses everything needful for the exhibition of snch stock, and the ponltry was well attended to under the personal direction of the Committee; and to the constant exercise of this necessary supervision no doubt the meeting owes its enccess. The Honorary Secretary, Mr. Peare, was most obliging and painstaking.

The silver cnp for *Game* fowls was secnred by a first-class pen of Brown Reds exhibited by Mr. Boyes, of Beverley. Although in the general Game classes the birds proved good, strange to say in the single Game cock class only two birds were worthy of notice. The Silver-spangled breed were the best of the Hambnrghs, Mr. Beldon taking the cnp with a magnificent pen. Thongh the competition was open to all colonrs, the *Dorking* cnp was secnred by Mr. Ruttlidge with a pen of very honestly shown Silver-Greys. There was an ahnndance of excellent *Cochins* of every variety; bnt the *Spanish*, thongh snperior stock birds, were mostly shown in very inferior condition for the show pen. We scarcely ever remember seeing so good a "Variety" class, and reference to the appended prize list will show that the variety was as great as the quality was excellent. The Game *Bantams* were very indifferent, many of the best birds being in ench sad health and so broken down by over-exhibition, that it was distressing to look upon them. The Local classes were as well filled as could be desired, the best Golden-spangled hens in the Show being entered in these classes. The improvement in this department of the Show was very marked.

The *Pigeons* and *Rabbits* were a very creditable collection throughout, and from a fresh arrangement, which seemed to be mnch appreciated, they this year occnpied a side room away from the poultry, &c.

Game.—*Whites and Piles.*—1, C. W. Brierley. 2, J. Brough, Carlisle. *Black-breasted and other Reds.*—1 and Cnp, W. Boyes, Beverley. 2, J. Brongh. *hc*, A. Ainslie, Lightburn, Ulverston. *Any other Variety.*—1, J. Barrow, jun., Kendal. 2, W. Boyes. *c*, E. Woodburn, Ulverston. *Chickens.*—1, W. Boyes. 2, J. Brough. *hc*. J. H. Wilson, St. Bees; T. Mashiter, Ulverston. *Single Cocks.*—1, C. W. Brierley. 2, J Brough. *c*, J. H. Wilson. *Cockerel.*—1, J. Brough. 2, C. W. Brierley. *hc*, W. Walton, Cocklake, Alston.

Hamburghs.—*Silver-spangled* —1 and Cnp, H. Beldon, Goitstock, Bingley. 2, Ashton & Booth, Mottram. *hc*, A. Ainslie. *Golden-spangled.*—1, W. Bearpark, Ainderby Steeple. 2, H. Beldon. *hc*. Mrs. B. Sweeten, Penrith. *Silver-pencilled.*—1, H. Beldon. 2, W. M. Mann, Kendal. *hc*, H. Pickles, jun, Earby. *Golden-pencilled.*—1, W. R. Park, Melrose. 2, H. Beldon. *hc*, H. Pickles, jun.

Dorkings.—*Silver-Grey.*—1 and Cup, W. W. Ruttlidge, Kendal. 2, T. Raines, Stirling. *hc*, W. Jackson, Bolton-le-Sands. *Coloured.*—1, J. Fox, St. Bees. 2, W. H. King, Rochdale. *Chickens* (Any variety).—1, W. W. Ruttlidge. 2, J. White, Warlaby. *hc*, J. Watts, King's Heath, Birmingham.

Cochin-China.—1, J. Sichel, Timperley. 2, T. Stretch, Ormskirk. *hc*, H. Lacey, Hebden Bridge; T. H. Readman; J. Watts. *Brown and Partridge-feathered.*—1, J. White, Netherton, Wakefield. 2, T. Stretch. *hc*, T. Sharp, Ackworth. *White.*—1, J. Sichel. 2, E. Fearon, Whitehaven.

Spanish.—*Black.*—1 and Cup, H. Beldon. 2, J. T. Hudson. *hc*, Hon. Miss D. Pennant, Penrhyn Castle, Bangor. *Chickens.*—1 and *hc*, Hon. Miss D. Pennant. 2, H. Beldon.

Brahma Pootras.—1, J. Sichel. 2, J. H. Pickles, Birkdale, Southport. *hc*, H. Lacey.

Bantams.—1, W. Barnes, Blennerhasset, Aspatria. 2, J. Mashiter. *hc*, W. Grice, Bootle; H. Beldon. *Game.—Black-breasted and other Reds.*—1, W. Grice. 2, G. Todd, Monkwearmouth. *Any other Variety.*—1, J. W. Backbank, Kirkseaton, Carnforth. 2, Bellingham & Gill. *c*, W. Grice; J. Anderson. *Any other variety except Game.*—1, M. Leno, Markyate Street (Silver-laced). 2, H. Beldon (Pekin). *hc*, H. Beldon (Black); Miss B. P. Frew (Silver-laced).

ANY OTHER VARIETY EXCEPT BANTAMS.—1, H. Beldon (Silver-spangled Polands). 2, W. R. Park (Crève-Cœur). 3, T. Dean (Polands). *hc*, C. Armstrong, Carlisle (Golden-spangled Polands); J. Sichel (Hondans); H. Beldon (Golden-spangled Polands). *c*, F. Ainsworth (Black Hamburgh).

GEESE.—1, S. H. Stott, Rochdale. 2, G. F. Statter, Carlisle.

TURKEYS.—1 and Cup, L. Patten, Hillmore, Taunton. 2, N. Merkin, Great Driffield. *hc*, Mrs. Butterfield, Penrith.

DUCKS.—*White Aylesbury.*—1, Mrs. J. Davidson, Greenhill, Penrith. 2, Mrs. Birkett, Ainstable. *Rouen.*—1 and Cup, S. H. Stott. 2, J. Banks, Kendal. *hc*, Mrs. J. Davidson; W. Myers, Ulverston; J. Banks. *Any variety.*—1, C. W. Brierley (Ruddy Shelldrakes). 2, S. H. Stott (Carolina). *hc*, M. Leno (Mandarin and Carolina); J. J. Waller (Buenos Ayrean).

SELLING CLASS.—1, H. Lacey (Dark Brahmas). 2, J. Sichel (White Cochins). 3, J. H. Wilson (Spanish). 4, W. W. Ruthledge (Silver-Grey Dorkings). *hc*, J. Brough (Brown Red Game); W. Linlow (Partridge Cochin); H. Beldon (Black Spanish); J. B. Story, jun. (Silver-Grey Dorkings); Mrs. R. G. Pears, Penrith (Buff Cochins). *c*, Mrs. R. G. Pears (Partridge Cochins).

LOCAL CLASSES.

GAME (Any variety).—1, J. Brough, Carlisle. 2, J. Davidson, Penrith. *hc*, J. Bell, jun., Lazonby.

SPANISH (Black).—1, T. Storey, Alston. 2, G. F. Statter. *c*, J. G. Armstrong.

DORKINGS (Any variety).—1, W. F. Winn, Bowerbank, Penrith. 2, Mrs. R. G. Pears. *hc*, Mrs. Birkett; G. Hoadley.

COCHIN-CHINA (Any variety).—1, R. Pickering, Brampton. 2, Mrs. R. G. Pears.

BRAHMA POOTRAS (Any variety).—1, R. Pickering. 2, Mrs. B. Sweeten.

BANTAMS (Any variety).—1, R. Pickering (Black Bantams). 2, M. Taylor, jun., Penrith (Black-breasted Game Bantams).

ANY VARIETY.—1, Mrs. B. Sweeten (Golden-spangled Hamburghs). 2, Mrs. Parker (Buff Cochins). *hc*, W. F. Winn (White Cochins); R. Pickering (Buff Cochins); J. Brough (Black Red Game); Mrs. R. G. Pears (Grey Dorkings and Partridge Cochins). *c*, Mrs. Birkett (Buff Cochins); Mrs. B. Sweeten (Partridge Cochins).

DUCKS (Any variety).—1, J. Brown, jun. (Shell Ducks). 2, R. Sanderson Aylesbury). *hc*, Mrs. R. G. Pears (Rouen).

PIGEONS.

CARRIERS.—1, J. & W. Towerson, Egremont. 2, H. Yardley, Birmingham. *hc*, H. Sawyer, Carlisle.

POUTERS.—1, H. Beldon. 2, H. Yardley. *hc*, J. & W. Towerson.

RUNTS.—1 and *c*, H. Yardley. 2, R. Thompson, Penrith.

JACOBINS.—1 and 2, R. Thompson. *hc*, J. & W. Towerson.

FANTAILS.—1, H. Beldon. 2, H. Yardley.

TRUMPETERS.—1, J. & W. Towerson. 2, H. Beldon.

OWLS.—1, J. & W. Towerson. 2 and *c*, R. Thompson. *hc*, H. Beldon.

NUNS.—1, J. Turnbull, Melrose. *hc*, H. Yardley; W. Bearpark.

TUMBITS.—1 and *c*, R. Thompson. 2, J. Turnbull. *hc*, H. Beldon; J. & W. Towerson (2).

BARBS.—1, H. Yardley. 2, W. Jackson. *c*, R. Thompson.

TUMBLERS.—*Almond.*—1, H. Beldon. 2, F. Moor, Burnley. *hc*, H. Yardley. *Any variety.*—1, F. Moor. 2, J. & W. Towerson.

ANY VARIETY.—1, H. Yardley. 2, J. Watts. *hc*, H. Beldon; J. & W. Towerson; R. Thompson.

SELLING CLASS.—1, R. Thompson. 2, H. Sawyer (Black Trumpeters).

CANARIES.

BELGIAN.—*Yellow.*—1, J. Brown, jun. 2, W. Askins. *c*, R. Ryan, Penrith. *Buff.*—1, R. Carr, Carlisle. 2 and *c*, T. Richardson, Kirkoswald. *hc*, J. Brown, jun., Penrith.

MULES.—*Yellow.*—1, J. Robson, Bedlington. 2, W. Moor, Kirkoswald. *Buff.*—1, J. Robson. 2, R. Carr.

SINGING BIRD (Any variety).—1 and 2, J. Brown, jun. (Yellow, with Green Cap). *c*, W. Stalker, Penrith.

RABBITS.—*Lop-eared.*—1, C. Gravil, jun., Thorne. 2 and *hc*, F. S. Arkwright, Sutton Scarsdale. *Any variety.*—1, S. G. Hudson, Hull. 2, D. P. Gooding, Colchester. *hc*, C. Gravil, jun. *c*, G. T. Hardman (Silver-Grey); S. Greenwood, Hebden Bridge; S. G. Hudson.

Mr. Edward Hewitt, of Birmingham, and Mr. Richard Teehay, of Preston, were the Judges.

NOTES FROM MY CANARY ROOM.—No. 2.

BEFORE getting any birds, a suitable house properly furnished must be provided for the young couple. If it be intended to put up a single pair in a quiet corner of the breakfast room, that you may enjoy the pleasure of seeing them give their little family their breakfast while you are having yours, then an ordinary breeding cage such as is supplied by the London dealers will suffice, and being usually made of mahogany or other ornamental wood, is by no means an unsightly ornament to the walls. Such, however, is not the description of cage used by those who embark more freely in Canary-breeding. My cages cover the walls of my room, and have from two to twenty compartments. The best dimensions for each compartment are 18 inches long, 16 inches high, and 10 inches from back to front, wired with No. 16 wire at the distance of half an inch from centre to centre—that is, if the holes are pricked exactly half an inch apart, the space between the wires will be somewhat less, and just the required width for safety and strength. The door should be not less than one-third the height of the cage, large enough to admit the hand with a pot of green food, or to allow of free motion in the inside when a good whitewashing is necessary, which is at the beginning and end of every season. Mix some common whiting with thin paste till it is of a consistency just thin enough to work freely with the brush, and thoroughly paint the interior with the composition, working it well into all the cracks to give the red mites, which often pester the Canary, no home. Let there be two stout perches from back to front, about 6 inches apart, and projecting an inch or two through the wires to admit of their being grasped when a change in their position may be necessary, or for removing them now and then to give them a scrape and a rub, for nothing is more injurious to a bird's feet than a dirty perch.

The nest must be hung up at the back of the cage between the two perches and about on a level with them, and may either be a wood box about 3½ inches square and 2 inches deep, such as can be had at any bird shop, or it may be of tin or of unglazed earthenware, which cannot be had in a general way at any shop, at least I think not. I believe the tin and pot nests are peculiar to the north. We, having potteries on the banks of the Wear, can obtain sundry little things made to order, and these unglazed nests among them. Very neat and pretty they are, snowy white, cool and ornamental withal. Supply moss and soft doe hair, and the hen will soon build herself a beautiful nest in the wood box. If a tin or pot nest be used, line it with a piece of saddler's felt. There are two or three kinds of which I do not know the trade names; but what I use is brown, about three-eighths of an inch thick, tough and strong, but it splits easily into two thicknesses. Cut this into circular pieces, notch the edges, and fit into the nest box, fastening it through the holes in the bottom if it be of tin, or with stiff paste if the pot nest be used. Supply moss and hair, and the hen will line the artificial nest according to her own ideas of comfort, or, if no extra material be furnished, she will work the felt alone into proper shape. The advantage possessed by the artificial over the natural nest is, that it can more readily be changed if infested by red mites.

One more glance at the outside of the cage. The seed and water-hole arrangement is too well known to need any description; but when a cage consists of two or more compartments the seed-hoppers must be so arranged as to be get-at-able from two divisions at once. For a sitting-room the ordinary glass bottle for seed and water is the best arrangement, as the closed-in head prevents either from being scattered on the floor, but on a larger scale tin water-vessels to hook on and off are most generally used.

A correspondent writes me that the great art of teaching is to endeavour to realise the utter ignorance of the pupil. Quite right. No elementary teaching can be too simple, and he is the best teacher who can best adapt his teaching to the capacity of his pupil. I am writing for those who, I take for granted, are entirely ignorant of the subject, and learned critics must not say, "Why, everyone knows this and everyone knows that!" It is a great mistake; everyone does not know it.

Having cleaned, sanded, and seed-and-watered your cage, hang it against the wall in a light pleasant corner; sit down in front of it and admire it, and next week I will tell you what to put in it.—W. A. BLAKSTON.

WOODBRIDGE CANARY SHOW—ANOTHER PRIZE LIST EXTRAORDINARY.

A SHORT time ago an article appeared in the Journal relative to the result of the cup competition at a northern show. The arguments therein adduced were to my mind very conclusive. A glance at the margin of the Woodbridge catalogue affords another evidence alike of the absurdity and injustice of giving a value to commendations in a cup competition. I will present two scores, and ask any person who understands what high-class Canaries and Mules are which is the better of the two? Mr. Ashton sends twelve birds and wins seven prizes—viz., 3 first prizes = 18 points; 4 second prizes = 16 points; = 34 points in prizes. Add 2 very highly commendeds = 4 points. Total, 38 points. Mr. Fenn sends sixteen birds and wins five prizes—viz., 3 first prizes = 18 points; 2 second prizes = 8 points; = 26 points in prizes. Add 7 very highly commendeds = 14 points. Total, 40 points. The absurdity is so self-evident as to need no demonstration. The injustice is equally patent. I wonder how any thinking body of men can commit themselves to the issue of a schedule offering a trophy to be competed for on such an unfair footing, virtually making it a gift not to the winner of the greatest number of prizes, but to the man who, without winning a single prize, can still carry off the prize of prizes. Of all the anomalies in connection with our bird shows this is the greatest, and requires to be attacked unflinchingly, striking as it does at the root of all meritorious competition.

I could make a few comments, too, upon the judging, though I am always inclined to be liberal in the extreme in this respect. But my charity is frozen in face of the fact that a Silver Lizard which has been exhibited nine times this season, not only in provincial shows, but at the Crystal Palace, where it stood for the ninth time a peerless unbeaten gem, should at Woodbridge be left out in the cold; while another, which could approach it no nearer than by a very high commendation, and which was referred to by one of our ablest judges in a review of the Palace Show as being so hazy and indistinct in its spangles as to be "in a cloud," was at Woodbridge placed before it.—A CORRESPONDENT.

VENTILATION OF HIVES DURING WINTER.

MY bees are all located in Woodbury frame hives, and have for many years been exposed to full ventilation during the

whole of the winter, without in a single instance sustaining the slightest injury even from the most severe frost. The hives are in the open garden, each on its own stand, protected from the wet by an outer covering, consisting merely of a square frame or box, without top or bottom, which fits loosely over the hive, and is surmounted with a loose eloping cover which can be lifted off at any time without disturbing the hive or its protecting exterior covering.

My mode of ventilating is extremely simple. I merely remove the bung from the top of the hive, put a piece of perforated zinc over the orifice, and allow all the heat and vapour generated inside the hive to escape freely into the open air, as a perfectly free circulation exists in every direction between the hive and its external cover. The bungs are removed in November, and not replaced until the winter is fairly over—*i.e.*, from the middle to the end of February. On March 4th I overhauled two of my hives, one of wood, the other of straw, and found the bees and combs in both quite free from damp, and in excellent condition. The wooden hive, as it chanced, was much the stronger, but both alike contained young bees and brood in all stages, and the queens seemed to be in full laying condition.

With ventilation bees seem to me to do quite as well in a properly-constructed wooden box as in a hive made of straw; but where ventilation is neglected straw is, without doubt, the best material.—J. E. B.

OUR LETTER BOX.

Woodbridge Poultry Show (*A Suffolk Amateur*).—We cannot insert your letter. The judge would defend his awards, and our space would be needlessly occupied, for no satisfaction would be given to anyone.

Egg-preserving (*C. M. M.*).—We know nothing of the preparation you mention.

Shell-less Eggs (*May*).—As your fowls have large beans of lime rubbish to frequent, we incline to think that they are too fat, and that their egg-organs are over-excited. In that case the stimulants you gave would be injurious. Give each a dessert-spoonful of castor oil, abundance of green food, and less nourishing food, also less of it.

Excluding Fowls (*A. B.*).—Your neighbour should be compelled to keep his fowls from trespassing. If you choose to be at the expense, put up a galvanised-iron netting 3 feet high all round, with no bar at the top. The widest-meshed netting would do and is the cheapest.

Aspect of Hen-house (*F. R.*).—The more sunshine on the run the better, provided there is one shaded, covered part under which a heap of sand and coal ashes can be kept dry, so that the fowls can have a dusty bath at pleasure.

Dorking's Tongue Diseased (*H. S. F.*).—The complaint from which your Dorking cock is suffering is an accidental thing and cannot be hereditary. Feel the tongue with your finger, if there be any callosity remove it with the thumb-nail. You may treat it with a strong solution of alum, with essence of wormwood, or with any powerful astringent. You run no risk in breeding from him.

Crossing Hamburghs with Game (*G. E. A.*).—It is almost an impossibility to breed winning cocks and hens of the Hamburgh breed from the same parents. We do not think much of the light colour of the legs, but we would not breed from any bird with a faulty comb. In breeding for exhibition, if the hens are deficient in any property they should be put to a cock having those qualities almost to excess.

Cinders and Fowls' Feet (*A Young Amateur*).—Cinders make a very bad bottom for a poultry-pen. In the event of any fowl having a tender foot, the cinders perforate the skin and lay the foundation of an ulcer. Another objection to them is, they afford no scratch for the fowls. Cover your run with loose earth, and with lots of road-grit. We presume from the tenor of your query, your fowls are kept in confinement. Supply them with large sods of growing grass cut with plenty of earth. You must endeavour to give them all they would get if they were at liberty. If they are to be healthy, they must be able to scratch, they must have dust to bask in, and they must have access to fresh earth and growing grass.

Bran for Poultry (*Puzzled*).—Your friend's success is at most only an exception to a rule, and the ages of the fowls might, if we knew them, afford a clue to it. To be able to judge, we should know the quantity of barley given at the one meal; if abundant, then bran was only needed for crop-filling. We cannot keep our fowls under 2*d* per week per head, and shall be more than grateful if your friend will publish some details of his feeding that we may reduce our expenses. What were the fowls be exhibited? Andalusians can only show in the variety class, and there are seldom classes for cross-breds. We consider the laying very satisfactory.

Camphor for Fowls (*J. Clark*).—When time permits, we make our infusion of camphor by putting broken camphor in a bottle, in sufficient quantity to fill the bottle one-quarter, we then fill-up with cold water and let it stand till it becomes that which was formerly called camphor julep. If it is necessary to make it in a hurry, it can be done by breaking up a large lump, putting it in any vessel that will admit of being closed, and filling with hot, almost boiling water. Whenever we see any indications of failing in our chickens, we always put camphor in all their water-vessels, and sometimes add wormwood. Camphor cures gapes and prevents contagion

Spanish Cock's Face Wounded (*Black Spanish*).—Rub the face with citron or spermaceti ointment. It will soon heal. You must not put him with hens, as they will pick the wounded places to his great detriment.

Various (*W. T.*).—The hen was not really broody, no hen is so that lays five eggs in a week. Sitting hens should not be with the others. They should be in a place apart. When you buy a broody hen she should be put in a low basket that does not allow her to stand up, and should be covered so as to be in the dark. She should be put on her eggs at night, in a box or basket, still low as we have described, and shut down in the dark. She should be taken off to feed the next day, and replaced in the basket or box under the same circumstances. Hens have their likes and dislikes, and will very often decline to sit in a new place if they can escape. It does not matter that the eggs are three weeks old, if they have not been sat upon. They will hatch as well at three weeks' end as they will the day after they are laid. Your Pigeon is cramped, or is diseased at the knee-joints, it will not get over it. There is no such thing as a rose-combed Cochin. If you keep cross-bred birds keep him, if you do not, put him in the stock-pot. (*West View*).—Lower your perches, bring them within 2 feet of the ground. Let the house be cleaned every day, it is only the work of a few minutes. Your feeding is too liberal, you will improve by discontinuing the wheat, potatoes, and flour. We believe they have somewhat to do with the complaint. Give in the morning barley or Indian corn, scraps and ground oats at midday, and whole corn in the evening. We believe these alterations will prevent all you complain of. If they do not, it will be because the secretions are at fault. In that case give Baily's pills, but we do not think you will need them.

Pigeon Unable to Stand (*Anxious*).—Most probably the thigh bone is dislocated. We saw such a case in a friend's loft. A Jacobin was unable to stand, but ate well. We took the bird in hand, passed the finger up the leg, and found the joint was out of the socket; we gently drew the leg down and put the leg in place, and then bound the whole limb with a piece of broad tape, removed the bird to a cage in a quiet place, and it speedily recovered. It might be well to muffle the other leg, and tie the wings, so as to prevent the bird struggling, and give only light twice a-day in order for it to see to eat and drink. It will be quieter in the dark.

Canary Moulting in the Spring (*Vulcan*).—It happens now and then that a bird will moult all its body feathers in the spring, not its tail and flights. I have had hens do so and breed well. There is no reason why the cock should be useless—none whatever. Give him a trial.—W. A. B.

Bees in a Woodbury Hive (*M. G. B.*).—You may try if the bees will accept either ryemeal or wheaten flour in lieu of pollen; also give them 2 or 3 ozs. of liquid food in an inverted bottle on fine days, say about twice a-week if practicable. This treatment, coupled with the advent of spring, will probably put a stop to the mortality.

METEOROLOGICAL OBSERVATIONS,

Camden, Square, London.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude 111 feet.

Date. 1871. March.	9 A.M. Barometer at 32° and Sea Level.	Hygrometer. Dry.	Hygrometer. Wet.	Direction of Wind.	Temp. of Soil at 1 ft.	In the Day. Shade Temperature. Max.	Shade Temperature. Min.	Radiation Temperature. In sun.	Radiation Temperature. On grass	Rain.
	Inches.	deg.	deg		deg.	deg.	deg.	deg.	deg.	In.
We. 15	29.875	35.5	34.0	N.	42.2	41.2	29.0	89.0	26.3	0.375
Th. 16	29.357	35.8	35.2	N.E.	41.2	44.0	32 8	84 1	31.6	0.022
Fri. 17	30.259	40.8	37 0	N.	41.8	46.8	30 2	78.9	28.0	—
Sat. 18	30.270	46.0	44.1	N.	40.5	58.0	36.4	81.3	32.0	—
Sun. 19	30.285	46.2	45.2	S.W.	41.5	56.4	42.0	79.0	39.8	—
Mo. 20	30.088	45.5	43.6	S.E.	41.4	55.5	37.3	76.6	33.2	—
Tu. 21	30.085	40.2	38.8	S.W.	41.3	54.8	34.4	94.8	33.6	—
Means	30.024	41.4	39.7		41.3	50.8	34.6	83.4	32.1	0.397

REMARKS.

15th.—Snow, large flakes between 6 and 9 A.M., fine at noon, heavy snow after midnight.

16th.—Snow and rain at 11 A.M.

17th.—Ice in the road in the morning, warmer in the evening.

18th.—Dull day, very little sun.

19th.—Fine morning, thick in the middle of the day.

20th.—Foggy and dark in the morning, and rather thick all day.

21st.—Rather dull in the morning, but the rest of the day beautiful and spring-like.

Another fine mild week. Rapid fall of barometer from 29 770 at 9 P.M., on 15th, to 29 357 at 9 A.M., on 16th, from which time it rose quickly, being 29 462 at 11.10 A.M., 29.497 at 11.30 A.M., 29.572 at 0.30 P.M., and 30.023 at 9 P.M.—G. J. Symons.

COVENT GARDEN MARKET.—March 22.

There has been a fair attendance here and prices remain nearly the same as last week The Continental trade was beginning to revive, but has again been checked by the untoward events in Paris. Articles of good quality, both in fruit and vegetables, now find a ready market; some good new hothouse Grapes and Strawberries are among the former.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples ½ sieve	1	6	to 3	0	Oranges ₱ 100	6	0	to 10	0
Chestnuts bushel	10	0	18	0	Pears, kitchen doz.	2	0	6	0
Filberts lb.	0	0	2	0	dessert doz.	3	0	8	0
Cobs lb.	2	0	2	6	Pine Apples lb.	6	0	10	0
Gooseberries quart	0	0	0	0	Strawberries oz.	3	0	6	0
Grapes, Hothouse lb.	10	0	20	0	Walnuts bushel	10	0	16	0
Lemons ₱ 100	6	0	10	0	do ₱ 100	1	0	2	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Asparagus ₱ 100	7	0	to 10	0	Lettuce doz.	1	0	to 2	0
Beans, Kidney ₱ 100	2	0	3	0	Mushrooms pottle	1	0	2	6
Beet, Red doz.	2	0	3	0	Mustard & Cress punnet	0	2	0	0
Broccoli bundle	0	3	1	6	Onions bushel	5	0	8	0
Brussels Sprouts ½ sieve	3	0	4	0	pickling quart	0	4	0	0
Cabbage doz.	1	0	2	0	Parsley sieve	3	0	6	0
Carrots bunch	0	4	0	8	Parsnips doz.	0	9	1	0
Cauliflower doz.	2	0	5	0	Potatoes bushel	2	0	4	0
Celery bundle	1	6	2	0	Kidney do.	3	0	4	0
Coleworts doz. bunches	3	0	6	0	Radishes doz. bunches	0	6	1	0
Cucumbers each	0	6	1	6	Rhubarb bundle	0	9	1	6
Endive doz.	2	0	3	0	Savoys doz.	1	6	2	0
Fennel bunch	0	3	0	0	Sea-kale basket	2	0	3	0
Garlic lb.	0	3	0	0	Shallots lb.	0	6	0	0
Herbs bunch	0	3	0	0	Spinach bushel	3	0	6	0
Horseradish bundle	3	0	5	0	Tomatoes doz.	0	0	0	6
Leeks bunch	0	4	0	0	Turnips bunch	0	6	0	0

WEEKLY CALENDAR.

Day of Month	Day of Week	MARCH 30—APRIL 5, 1871.	Average Temperature near London.			Rain in 43 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.	Days.	m. s.	
30	Th	Meeting of Royal Society, 8.30 P.M.	53.7	34.3	44.0	19	43 af 5	28 af 6	3 11	0 af 3	9	4 37	89
31	F	Cambridge Lent Term ends.	55.3	33.9	44.6	18	41 5	30 6	after.	41 3	10	4 19	90
1	S	Oxford Lent Term ends.	55.0	34.4	44.7	21	38 5	31 6	15 1	17 4	11	4 0	91
2	Sun	6 Sunday in Lent. Palm Sunday.	57.8	36.7	46.9	21	36 5	33 6	32 2	47 4	12	3 42	92
3	M	Meeting of Entomological Society, 7 P.M.	57.1	36.7	46.4	20	34 5	35 6	51 3	11 5	13	3 24	93
4	Tu	Meeting of Zoological Society, 9 P.M.	56.7	35.7	46.2	17	32 5	37 6	12 5	33 5	14	3 6	94
5	W	Royal Horticultural Society, Fruit, Floral, [and General Meeting.	57.0	36.7	46.0	21	29 5	38 6	35 6	53 5	O	2 48	95

From observations taken near London during forty-three years, the average day temperature of the week is 56.1°, and its night temperature 35.5°. The greatest heat was 78°, on the 3rd, 1848; and the lowest cold 16°, on the 1st, 1838. The greatest fall of rain was 1.19 inch.

CELERY CULTURE.

HAVING seen such excellent Celery for sale in Dublin, as well as grown in various gardens near that city, I cannot believe, as "One in Trouble" suggests, that there is anything in the climate to prevent as good Celery being obtained there as in the north of Ireland.

As stated a short time ago, I do not place the same value on large Celery as I used to do; I am more partial to serviceable sweet heads. A huge head is all very well if it is so sent to table, but if the employer does not insist on its being sent to him as it comes from the hands of the gardener, a head as large as a man's thigh, when it appears at the table, will be no larger than one the size of his wrist. I have known some gentlemen so fond of the bottom part of Celery just above the roots that they would allow neither butler nor cook to trim it, but did all the cutting and trimming themselves. I rather think the employer of "One in Trouble" should do so, if he expects to be satisfied. I am convinced that moderate-sized Celery is generally the crispest and sweetest, and chiefly because it has not been afforded an extra quantity of manure, nor any which was rank and fresh, as such will always have a tendency to affect the flavour of the Celery. I have had some wonderful heads to look at by making a sort of hotbed with rank manure in the trench, and covering with 9 inches of rotten dung and soil, but I will say nothing of the crisp sweetness of such huge Celery.

There are several remarks suggested by the letter of "One in Trouble." First, if the soil in the field is of the same character as that in the garden, he will not be likely to succeed better in the one place than in the other. I do not know what the subsoil after the first spit is, but if hard and barren I would take out a portion, loosen the bottom, and then fill the trench to nearly the usual height with sweet rotten dung and leaf mould mixed with the best soil. It is of no use going deep into uncongenial soil. I often find that late Celery succeeds best when planted almost on the level, the soil along the side being banked up to blanch it. The deep trench is of little use, except as affording facilities for abundant watering; but plenty of water can be given if the plants are only a couple of inches or so below the level.

In the second place, I certainly should not use fresh cow dung if I could obtain anything else. Very rotten hotbed dung, or leaf mould somewhat rough and rather more than half decayed, mixed with the best of the surface soil would be much better. If even such dung is put into the trench early, and turned and aired several times before being mixed with the soil for planting, the Celery will be all the crisper and sweeter. I like to have from 6 to 9 inches of such hotbed manure and leaves mixed with about an equal portion of the best soil.

Thirdly, all Celery that grows freely, and especially when loosely tied, will have a tendency to crack the outside leafstalks at the base; but as these are generally removed, and if used at all, used for soups, &c., that is of less consequence. It would be well to see that your Celery is not dressed over-much after it leaves you. I knew a gentleman who came to his gardener to complain about the smallness of the Celery, and was astonished when he saw the fine clean blanched heads. He had never seen more than a bit at the heart about 3 inches in length. I hope your correspondent will succeed in pleasing his employer, but the task will be a difficult one, if after thirty years' experience of London he never obtained a good head of Celery. What say the London market gardeners? I know that Celery, after being wilted at market and on the stands, is very different from Celery taken at once from the trench to the table.

The disfigurement of the plants by worms and slugs can be greatly obviated, first by mixing some quicklime with the manure and soil in the trench sometime before planting, by watering with clear lime water several times without wetting the heads of the plants, and by using sifted ashes round the plants at earthing-up time.

Your correspondent is quite correct in his estimate of the importance of shade, especially for the earliest crops of Celery. It brings us at once to the main principle involved in the cultivation of Celery. By cultivation and the blanching resorted to we change the plant from an acrid somewhat unwholesome vegetable into a sweet and wholesome one; but we do not and cannot so change its mode of growth as to make a ditch plant flourish on the exposed plain, or on the top of a dry mound. The Celery naturally flourishes better on the side of a ditch, where there is a little moving water than in the morass where the water is stationary. Hence, though a Celery trench can take abundance of water when the plants are growing, these will not do so well nor be so sweet where the water stands on a retentive bottom. The sides of the ditch itself, and the accompanying vegetation, furnish a certain amount of flickering shade in which the Celery delights: hence when rows and beds for early use are planted, it is found that the Celery flourishes all the better with staked Peas between the rows. Without them I use a little artificial shade by means of laurel boughs, &c. Last year I kept Celery—the earliest—alive and healthy with very little water, by rather dense shading. Water here was like so much costly wine.

I also agree with "One in Trouble," and of course do not agree with his employer, that good Celery cannot be obtained without good decayed dung, or, as a substitute, a careful application of liquid manure. When I want a proof I just go back again to the ditch, and there, wherever the Celery flourishes naturally, if we do not find much depth of rich soil we shall find the stratum occupied by the roots a rich one, however shallow the crust may be, the richness being the result of the annual decay and decomposition of grasses and weeds. I have had sweet heads with very little manure, but unless I gave manure waterings freely the heads were small.

Once more. The ditch, with just the least quantity of moving water, furnishes the whole key-note for the successful cultivation of Celery, so as to keep it as a growing

plant, and not as a seeding plant, and this applies especially to the earlier crops. From the time the Celery is pricked out, transplanted to the trenches, &c., until taken up for use, *the roots should never be dry*. Every time this dryness occurs, and just in proportion to the strength and size of the plants, will an effort be made on their part in self-defence to throw up their flower stems, instead of mere extension of growth. Hence the whole system of gradually earthing-up early Celery a few inches at a time was radically wrong, as I endeavoured to show years ago. Every such earthing-up prevented waterings, rains, and dews from affecting the roots, whilst the fine foliage in bright weather threw off moisture so freely that ere long the roots became as dry as if the soil about them had been dried on purpose, and, as stated before, up came the flower stem in self-defence. The same principle applies to every plant, but it was overlooked in the case of the Celery. Arrest by any means vigorous growth, and you encourage the flowering and fruiting or seeding process. Hence for all early Celery, except just a little sprinkling of earth after watering to arrest evaporation, I prefer tying the Celery loosely, which encourages the heart to rise a little, watering well a day or two before earthing-up, and making that earthing-up the first and last, doing this earthing-up three weeks, or a little more, before the heads are wanted for use. When I used to have Celery in July and August I thus earthed-up small quantities at a time so as to come in in succession to each other. By adopting this plan I have rarely had a bolted head of early Celery. As the cool nights of autumn come on, when loss of moisture from evaporation from the foliage is reduced to a minimum, the old bit-by-bit system of earthing-up may be followed with advantage.—R. Fish.

ROSES, OLD AND NEW.

With regard to old Roses, what a pity that such fine and excellent Roses as Baronne Prevost, Gloire de Vitry, Duchesse d'Orleans, and Monsieur de Montigny, should be expunged from some of our catalogues. They are noble Roses here, and good throughout the year, and in every year. Mr. Cranston, so far as my catalogues go, is the only nurseryman who still retains M. de Montigny. It is one of the finest of the large Roses, very healthy, and scarcely ever suffers either from white or red fungus. I have sixteen plants of it on the Manetti, and have had them for many years. I hope it will be reinstated. It is a good grower on the Manetti, and a continual, and very late bloomer.

One word about new Roses, or Roses of late date. I recommend the following as fine choice Roses, of excellent growth on the Manetti—Edward Morren, Souvenir de Mons. Poiteau, Mademoiselle Eugénie Verdier, and Marquise de Castellane. This is a lovely Rose. I was much pleased with it last trying season. I recommend, as a good grower and beautiful Rose, Madame Trifle (Tea). The blooms of Marie Sisley and Louis Van Houtte are most beautiful; the latter has no equal in its hue. I have a plant of each, but neither showed that vigour of growth that I like. Still, last season was a very trying one for juveniles on weak stocks. At present I can only recommend the two Roses for their blooms. I am a "slow coach;" but some coaches are too fast, and upset the passengers. The Marquise de Montmartre is beautiful, but the plant has not yet exhibited growth enough. Madame Levet (Tea) I have not yet bloomed, but it is a nice grower, and looks like the sister of Madame Trifle. Monplaisir (Tea) is hardy and an excellent grower, and I think it promising, but must see it another season, before I will undertake to recommend it.

We have had a hyperborean winter here, and these Roses (not yet bloomed) have wintered out of doors triumphantly, from one to six plants each—Jules Chrétien, Nardy Frères, Madame Jacquier, Comtesse d'Oxford, Madame Chirard, Madame W. Paul (Moss), Abbé Giraudier, Paul Neron, Dupuy Jamain, and Clémènce Raoux, a very fine grower.

One word about Felix Genero. I recommended this lovely and admirable Rose some time ago, and my recommendation was pulled up by "the fast coaches." Mr. Cranston kindly sent me his new edition of his Rose book, and I see there "one hundred hardy Roses suitable for growing in the neighbourhood of large manufacturing towns, where much smoke prevails." Among the fifty best is Felix Genero. Among the fifty best out of one hundred for the north of England and Scotland, also for cold localities, is Felix Genero. Among the best one hundred Roses for show, is Felix Genero. Among the selection of the finest Roses for pot culture, is Felix Genero. My rosery is in most beautiful condition, considering that I am a "slow coach." I lost only eight Roses out of 1,833 last winter.—W. F. Radclyffe.

GOLDEN CHAMPION AND BLACK MUSCAT OF ALEXANDRIA GRAPES.

Strange it is that complaints of this fine Grape should appear now and then in the Journal. The Muscat Hamburgh [Black Muscat of Alexandria], has likewise been condemned by many. Some have characterised it as unfruitful; others as weak in growth and constitution, and subject to nearly all the ills attacking the Grape Vine. Now, it has been my fortune to plant and grow the Muscat Hamburgh in three different places widely separated in Scotland, one place being in Berwickshire, another near Peterhead, in Aberdeenshire, and the third in Forfarshire. Under these different conditions of soil and climate, I have found this Grape equal to a Black Hamburgh in every way, so far as growth, and setting, showing, and perfecting its fruit are concerned, and on all occasions the Vines were on their own roots.

My experience with the Golden Champion has not been so extended, but so far as that experience goes I shall detail the results. We have it planted in two different houses here, one in what we intend to be the early house. This house has its borders heated outside and inside. Another plant has a place in a succession house, which is filled principally with Muscats. Both Vines had been planted a year last June, when each had grown from eyes of the preceding year to be a shoot of 3 feet long, and was in an 8-inch pot. Both plants made good growths and showed fruit freely last spring. Of the bunches, we removed all but one in the Muscat house, which bunch I ultimately reduced in size, fearing it might injure the growth. What remained succeeded well; the berries swelled largely; colour, golden amber, with a faint russet shade next the sun. I attribute this red cast to the syringing. Growth being our object, the few bunches of fruit in the house were not considered. If fault can be found with thin-skinned berries, this is one in the Golden Champion, so much so, that one or two cracked, but not until the fruit had hung dead ripe for some time. The flavour was rich and luscious, with that pleasant smack peculiar to the variety. Last autumn the growth made by the Vine in the early house extended 24 feet, and that in the intermediate house 18 feet.

Now for the promise of the present year. Our first house of Vines has reached the condition that makes it convenient to thin the fruit bunches, the Vines having all broken nicely. I find some instances of blind eyes on the Golden Champion in this house, but not to the extent complained of by your correspondent, "Henry Nicholls." Many of the eyes show double bunches on the main rod, but the laterals are certainly deficient. This, however, is not the case with the Vine in the Muscat house, spurs and main rods are alike bursting fruit. Perhaps the extra heat applied to ripen the Muscats last autumn may account in some measure for this difference, but so far as I can speak I have no reason to condemn, but rather feel most hopeful of the Golden Champion proving the acquisition that most people expected it to be. I may have more to say respecting it next autumn, when its good or bad qualities will have been more fully proven to me.—A. Kerr.

BROCCOLI FOR WINTER USE.

Though much has been said showing the wreck of our winter and spring vegetables, very little can be done as a remedy against such severe weather.

Having found Snow's Superb Winter White Broccoli very useful, I feel it may interest some of the readers of this Journal to say a word in its favour. Early in December I had heads of this variety just turning-in. These plants I carefully took up with good roots and planted them very closely in a cold frame. On the first night of the severe frost I took up all the stock I had, including those that showed no signs of flowering, and consigned them to the same quarters, and my doing so enabled me to supply the table on an average of three times a-week until the 14th of February, on which day I cut my last dish. Though this is a very simple plan, it will amply repay anyone for his trouble in lifting and transplanting. I usually make two sowings—on the 1st of May, and about three weeks later; by doing this they succeed each other.

I quite agree with Mr. Gardiner on the importance of protecting frozen plants from the adverse influence of bright sunshine, as to my surprise, on the 25th of December I found my

Broccoli frozen, though protected by mats and Braken. It never had light for some considerable time, except while I was cutting, and not one head was injured. Air must be given on all favourable opportunities, and decayed leaves removed, for if these are allowed to remain they will smell very badly.

The minimum registered here on December 25th, was 20° of frost, and on the 31st, 22° of frost.

Veitch's Borecole I find very hardy, dwarf, and thickly studded with sprouts; very tender and sweet when cooked, and most useful now.—William Moorman.

PLANTS FOR TABLE DECORATION.

Having to provide largely for table decoration during the year, I send a few results of my observations.

I arrange to have as small a fire or fires as possible in whatever rooms may require decorating, a strong dry heat being as prejudicial to the health of the plants as the gas. The gas should be kept as low as possible till it is really required. Both of these points, though seemingly simple matters, are, nevertheless, of the utmost importance.

The rooms here in which plants and flowers are used, possess the advantage of having a door at each end. They are also lofty, and lighted from above, with the exception of the dining-room, which, in addition to the chandeliers from the ceiling, has gas at each end. The doors at the ends are a very great help to ventilation, though they must be so managed as not to cause a cold draught, a strong cold draught being very injurious to plants and flowers. This is a chief cause of plants suffering in long narrow corridors, lobbies, and passages, a draught being very trying even to hardier subjects.

My arrangement of plants on the dinner-table is very simple, though it is altered occasionally. I generally have whatever plants and flowers I purpose using placed in a single line down the middle of the table, usually having a large handsome epergne, when filled standing 30 inches high, and consisting of the top glass 12 inches across, and three side brackets with glasses 6 inches across. Then I have three or four plants on each side at regular intervals. For a change, I make a double row. Both ways are very effective, commencing with the tallest plants nearest the centre. Plants are also used for the sideboards.

I give the preference to plants being used rather than cut blooms; finding that with a little extra care and labour the injurious effects of gas, fire, and the change of air are reduced to a minimum.

I have all the plants taken from the rooms every night, or early in the morning, according to the time of the company leaving. They are removed to a conservatory adjoining the house and gently syringed. Any plants with soft flower stems and heavy tops, as Hyacinths, Cyclamens, &c., are placed on their sides while syringing them, and a gentle shake given them to take the weight of the water away.

The stakes or sticks I generally take out so as to make the plants appear as natural as possible, and I keep them shaded from bright sun for a few days. The result is, that during the last three years, though I have tried many different subjects, the only one that suffered was a fine plant of Gloxinia Sir Hugo, which I had to turn out of the pot in order to reduce the ball so as to make it fi ta certain vase. Attaching, as I do, the greatest importance to keeping the sides of the pots covered, I make use of vases or wine-coolers, placing a good layer of damp moss at the bottom, and where practicable round the sides, and covering the surface of the soil either with moss or damp white sand. I frequently have to turn plants out of their pots, and yet with the exception of that Gloxinia, they do not appear to suffer. When paper covers are used I place a layer of moss on the surface, finishing-off with white sand.

I am aware of the additional time and labour my mode involves, but it being my employer's wish to make a good display of plants and flowers, I pursue this object with spirit, and there is the satisfaction of knowing I have done my best.

I will begin my list of plants with what I used for parties the week ending February 25th. First, there was a Camellia Rubens, a neat variety, of good form, and free-flowering; it is in a 6-inch pot, and about a foot high. This was a gem, and is also again in use for the same purpose at the time I am writing, March 2nd. Earlier I used a companion plant of Fimbriata, and I certainly cannot see that the rooms have had any effect on them. I had Acacia Drummondi, 2 feet high, a very suitable plant for decorating, standing well; Epacris candidissima, a splendid flower, as also E. hyacinthiflora; E. Salmonea, smaller but good; and Epacris Model, true to its name. The last-named is a gem, the colour being very striking by gaslight; it has also been in use to-day. As I before remarked, the sun must be kept from them, otherwise a very sunny day, as was the case on February 25th, will undoubtedly spoil them. Hyacinths—Princess Frederick William, a noble white; Lord Raglan, a lavender, a fine grower; and Le Prophète, a splendid shade of red, all did well and are good yet. Erica hyemalis and Wilmoreana I use with good effect. One plant of Erica hyemalis has been used for the same purpose for five weeks with changing, and was turned out of the pot once, and yet is as fresh as ever. Prunus sinensis, a fine symmetrical plant, 2 feet high, a mass of bloom, is, so far as I can judge, no worse than it would have been had it not been taken out of the conservatory. Cyclamen persicum rubrum is as good a plant as can be used.

The next plants which will be ready for use are the Cinerarias, of which I like the named varieties best, as they are scarcely so coarse-growing as seedlings, though seedlings, if they are good, are not to be despised. I have at this season used Dracæna Cooperi and Isolepis gracilis, also Primulas. I intend trying Calceolarias when ready, but I am afraid they will not answer. Lily of the Valley grown in moderate heat makes one of the best of plants. It will come in very shortly. A very sweet though simple plant for variety is the wild blue and white Violet. I have some in bloom which came from the south last spring, and they are now in use for the drawing-room. Deutzia gracilis is good for an occasional night, but if used longer the flowers drop. Roses coming in flower in April are good; I have tried them before that time, but they do not stand so well. Fuchsias are not to be depended on more than a night. Farfugium grande is always good when not grown in much heat. Lobelia speciosa is always good. French and Fancy Pelargoniums in small pots are good. The same character is deserved by the Ivy-leaved Geranium, and the variegated one called L'Elégante. Sclaginella denticulata and densa, as well as a newer kind Poulterii, make beautiful plants. Of Ferns, Adiantum cuneatum, Pteris serrulata, and Asplenium bifidum make good plants when they are at rest in August or September. The dwarf Chrysanthemums, where they can be arranged, are very fine and last a long time. About the last I shall now speak of is Poinsettia pulcherrima. This, grown for a few weeks in a cool conservatory, does not suffer by being used for table work.

The above list, though not complete, gives a variety of plants that may be grown and used for dinner-table or house decorating, and what I have named I have tried here with success.

Of cut flowers, of which I use as few as possible, Camellias stand first. I have now in water some which have been in the rooms a week. I put a lump of charcoal in the water, or a little salt to keep the water sweet, and when I re-arrange the flowers I cut off a small portion of the old stem. The Azaleas, Acacias, Tulips, and Narcissuses are also good. Narcissus Horsfieldii is grand as a large yellow, and Paper White for white. Hyacinths in pots when becoming shabby may be cut and trimmed-up, and will last for a few days. Deutzia gracilis and the different varieties of Epacris and Ericas last well, though it is a pity to cut them. Roses cut when about half opened are excellent.

In summer there is plenty of variety, and therefore I prefer using ornamental-foliaged plants or Ferns to flowering subjects. In the autumn the various Liliums are good and lasting. Then come the Chrysanthemums. I have purposely left out stove flowers, as I find they usually do not stand room-exposure so well as the cooler-house subjects, though I should not omit the Linum trigynum, Erarthemum pulchellum, and Euphorbia splendens, but even these are generally grown in the conservatory at blooming time. At some future period I may send additional notes.—Stephen Castle, *Bent Hill Gardens, Prestwich.*

CROSS-BREEDING TRICOLOR GERANIUMS.

I should like to see communications in your pages respecting the desirability of getting, if possible, something like a standard by which young beginners would have a chance of success, without having to cross-breed over a series of years before they could form for themselves an opinion of the relative merits of the different Zonals, and the effect they have when crossed with the Variegated kinds. It would be a great boon to many, if some of our successful hybridisers would name, say two or three of the best Zonals, and a similar number of Variegated kinds, with which they have been most successful in crossing. Then we should be able to form a rule to work from, and it would be a great inducement to many to make the attempt when they could see that others had been successful by following the rules laid down for them. If cross-breeding could be reduced more to a certainty than it is at the present time, it would be a source of pleasure to

many to know that they could be able to raise something new and good, if not superior.—G. H. Kenyon.

CHINESE PRIMULA CULTURE.

Generally speaking, this lovely winter-flowering plant is not so extensively cultivated as its merits entitle it to be, nor, where it is grown, is a sufficient amount of care bestowed upon it to bring it to perfection.

In large establishments, or where the demand for winter flowers is great, I would still adhere to the old practice of two annual sowings—one early in March, and another at the end of April. The first answers the call for flowers at the beginning of September, and fills up the gaps created by the summer plants ceasing to afford bloom. The plants from this sowing may be calculated on as furnishing continuous bloom during the dead of winter, while the second sowing forms a good succession, besides affording substitutes for plants in the early collection killed by damp or other causes.

While advocating this system as the best to follow, I may remark that when the Primula is properly grown there is no difficulty, one sowing blooming in profusion for seven months—that is to say, from September to April successively. In support of this assertion I may mention that the majority of our plants now in a blaze of flower were staged in like condition along with the Chrysanthemums; at the same time the demand on them for cut flowers has been enormous.

Before entering into cultural details I would impress upon the intending cultivator the desirability of securing seed from a nurseryman who can be depended on for supplying seed of a good strain, for much vexation is caused when the cultivator finds that his summer's care and labour have been spent on trash; and, if possible, this annoyance is aggravated on seeing a neighbour's stock of plants with flowers the smallest of which might put his best ones to shame.

As regards sowing, it is important to have the seedlings in the rough leaf before the days, and consequently the duration of sunshine, become lengthened too much, so that the sooner in March that the seeds are sown the better. The soil which I have found to answer well for sowing in is a mixture of leaf mould and silver sand in about equal parts, with a small proportion of light, friable loam added, then sifted through a fine riddle. Pots of 6 inches in diameter, after being sufficiently drained, should be filled to the rim with this soil; it must then be gently pressed and smoothed, after which the seeds may be scattered over the surface, covered lightly, and a sprinkling of water given through a fine rose. The pots are then staged out of the blaze of the sun, with a piece of glass or white paper placed over them to prevent too rapid evaporation, and to avoid the risk of supplying over-much water while germination is going on, for too much water in the early stages of growth is apt to render the seedlings soft and susceptible to the effects of sunshine, damp, and drought. Damp in particular causes great destruction, and should be carefully prevented. The most suitable temperature is low rather than high, say an average of 55° at night and 60° in the day, with, of course, air admitted when the weather permits.

With respect to the general management of the plants, while these are in the seed bed water sparingly in the afternoon, giving enough water at a time to penetrate beyond the roots, but be careful to guard against saturating the soil. When the second pair of leaves are well expanded lose no time in potting off, using pots of the smallest dimensions, and the same sort of compost as that employed for sowing. Transfer the young plants in the most careful manner, retaining about their roots as much soil as will adhere to them. It is well to plunge the pots in shallow boxes among sand. This in a great measure defends the roots against strong heat and drought, while the plants grow much more rapidly than when exposed in small pots on the open shelf.

I will now consider the proper place for the plants to occupy. Undoubtedly, moderate shade, moisture, and a steady, mild flow of fresh air, united, are highly beneficial to rapid growth. Practice has fully persuaded me that at this stage the more closely one can conform to these principles, especially in the heat of summer, the better will be the plants. The best shade for the purpose is a thin whitewash made of quicklime dissolved in water along with a few handfuls of common salt. I have put salt into the same mixture for whitewashing the back walls of our vineries, &c., this spring, and find it most satisfactory. In this case there was no plaster, and many of the stones are decayed, and fall away in scales, leaving the wall blotched and unsightly. The lime and the salt have effectually prevented the progress of the decay, and I believe that a strong dose of salt along with hot lime must likewise be very destructive to insects. Let the wash for shading be of the consistency of milk, and apply it while the sun is shining. One application will last for the season.

Should the plants prosper, pots of larger size will be soon wanted, likewise a change of soil. Use at this potting pots 3 inches in diameter, and soil consisting only of light, rich, fibrous loam, with one-tenth of bone meal, and a small quantity of leaf soil. These incorporated in an unsifted state are perfection. Pot moderately firmly, using plenty of crocks. Displace the soil from the collar of each plant until the upper roots are laid bare at the places where they join the stem. Never mind if the plants fall to one side; they must be supported by small stakes, one at each side. The plants being again placed upright, with a piece of matting to embrace the stakes, 20 per cent. of them will be saved from the "rot."

I have now to advise quite the reverse of what I advocated early in the spring—namely, water in abundance during the summer, afforded both at the roots and by sprinkling overhead in the evenings after strong sun heat. This practice ought to be steadily followed up throughout the summer till the commencement of September, when it must be discontinued, and water supplied only when the soil becomes dry, and then with the greatest caution not to wet the foliage or stems of the plants. As much air as possible must be given, in order to harden the plants and enable them to withstand the changes that occur in a conservatory in winter. See that all flower stems that start up are removed before the end of August. These only stunt the growth; the flowers that succeed may be allowed to grow. As the plants advance in growth, provide pots two sizes larger until they ultimately occupy pots from 6 to 8 inches in diameter.

With respect to the succession plants, the same routine of cultivation ought to be pursued, with this addition—namely, that their flowers should be removed constantly as they appear until the new year, which will be soon enough to permit flower-steme to start, in order to succeed the plants from the first sowing.—A. Kerr, *Carbet Castle.*

DEATH TO THE WIREWORMS.

"We drenched them with a draught so deadly cold,
It soon congeal'd * * * *
The channel of their blood and froze them dry."

"J. R. S. C." (page 180) closes an interesting article on the wireworm with what I believe to be one of the grossest popular delusions that beguile the horticultural mind, "the oddest remedy"—viz., "cramming it to death with luxurious food," an insidious generosity which I tried to exercise in vain. Having a piece of newly-broken-up grass land much infested with wireworms, I invoked every one's aid to exterminate or diminish this pest, and "cramming to death" became a part of my horticultural education in this wise. Finding no marked result from any of the suggested remedies, I conceived the idea, being able to submerge the land in question, of drowning my enemies, and, to try the experiment on a small scale, first collected about two hundred, and kept them in water for two days and nights; not one succumbed to this treatment, though all were affected by it. They were then transferred to a small wooden tub half full of earth, and after allowing them two or three days to recover from their cold-water cure, I mixed two large handfuls of rape cake with the earth, and planted a potato, and the wireworms had peace and luxurious plenty for some six months, till Dr. Hogg visited me, and we proceeded to examine the results of the repletion theory. The tub was inverted, and out came the most fat, golden, and active wireworms that ever worried a crop or a gardener. The potato had been attacked in divers places, yet had produced two small tubers, and, as we thought somewhat remarkable, these had not been touched. After half-an-hour's absence we returned to have another look at our enemies, whom we had left on the ground so provokingly well, and behold they were all dead as Julius Cæsar; a thermometer at 32° had finished them. My conclusion was that rape cake is a delusion (I had tried it previously drilled in), and that wireworms cannot stand cold: hence we find them in winter in the second spit, and deep digging in winter is good, because it exposes them to cold and death.

Potato traps—*i.e.*, slices on pointed sticks, placed about 4 inches deep, are most useful. I have constantly taken from

twenty to thirty worms from one trap, and in this way destroyed hundreds weekly. I know of nothing so fatal to them as plenty of these traps and a strong thumb nail.—C. C. E.

P.S.—Many may be caught feeding on the roots of the common Dandelion.

HOP CULTIVATION FOR ORNAMENT AND USE.

No. 3.

Insects and Diseases.—No plant with which I am acquainted so often falls a prey to the attacks of enemies as the Hop, for frequently the set has scarcely been put in the ground ere the *wireworms* find it out, and injure if not kill it. As a preventive, a Potato is often cut in two, placed in the ground near the set, and examined frequently for the larvæ, which adhere to it in preference to the Hop.

A more formidable enemy attacks the plant when its shoots are emerging from the ground; it is *the Flea*, or jumper beetle, which, by eating into the young leaves and shoots, does much harm. Some growers endeavour to catch it, by using a common glass bottle with a funnel in it, and sweeping the fleas from the plant with a hand brush or a fowl's wing. They thus catch a large number, as the insects, when once in, cannot easily escape from the bottle. Making the ground fine round the hill also deprives them of the shelter of the rough lumps, and when the plant has fairly made a start up the poles, it is usually safe.

A worse enemy comes next—the *Aphis*, or fly, which has on many occasions entirely destroyed every prospect of a crop. This makes its appearance, more or less, every year, usually from the middle to the end of May. It begins on the under side of the young leaves near the top of the plant, and follows up the growth as it is made, sucking the juices out of the foliage and stem, and leaving young in the shape of "lice" or "nits," as they are called, beneath every leaf, their excrements creating that blackness which is often called blight. Honeydew is also created by the same means. The plant, if vigorous, will for a time struggle against the attack, and if the weather be dull it will outlive it, but if a dry, hot, sunny period set in, then comes a trying time. The plant very often seems to become scorched, further hopes of a crop being then out of the question, and, on the other hand, it sometimes recovers in a remarkable manner, and a fair crop is the result. This evil was one which until recently was supposed to be beyond the control of the grower; but the exertions of a few planters in Kent have certainly given a stimulus to others, and the means adopted to counteract this formidable foe deserve to be noticed by all gardeners who have green fly to contend with.

It is unnecessary to describe in a gardening paper the mischief which aphides are capable of inflicting; Peach walls as well as Hop plantations too often experience their destructive powers. The limited area of the Peach wall often enables the grower to devote the necessary attention towards arresting the progress of the evil, but a hundred acres of Hops are more difficult to manage; nevertheless, of late years the attempt has been made, and the crop in many instances has been saved.

Before entering into the details of the mode of cure, I will state the opinion of Hop-growers regarding this persistent enemy, which in some respects differs considerably from the aphis, so troublesome to the gardener—the Hop-grower affirms that however severe the blight of aphis may have been one season, the plant is rarely, if ever, attacked in the same way in the next year. This is certainly not the case with the Peach tree, which is often persecuted to death; but I am not sure whether the Hop-grower's once-passive treatment of his plants did not tend more to prevent the recurrence of the evil in the following year than the activity of the gardener. The latter, in all probability, goes over his trees several times, removing all curled and affected leaves, while the Hop-grower let his plants alone; and although the leaves were so blackened, shrivelled, and deformed as to scarcely resemble leaves, I believe they still fulfilled the office of supplying the root with that food which foliage only has the power of giving. The Hop plant when in an insect-ridden or diseased state was never cut down till much later in the season than it would otherwise have been, so that, whatever semblance of leaves there might be left, they could do their duty to the last. I therefore particularly call the attention of gardeners to this fact, and ask them whether they do not too hastily condemn and remove the diseased part of a plant before it ought to be taken off, especially in the case of various exotics, thus weakening the plant, and rendering it likely to be attacked again.

The day, however, of allowing the fly to run its course has passed by, and expensive and energetic remedial measures are now adopted by the bulk of growers where necessary; neither must Hop-growers be harshly censured for not having done so sooner, for peculiar features in the Hop trade deterred them. The buyers of Hops imposed certain rules which checked experiment; indeed they may be said to have tyrannised over the grower, and some years ago a gentleman who, in order to counteract the effects of threatened mildew, had the temerity to break through the laws which that body thought fit to impose, found himself mulcted in several thousands of pounds by a lawsuit which followed the sale of his crop. Fortunately the light that was thrown on the matter at the time, and since, has partly removed the oppression of which the grower had just cause to complain, and he can now use what remedy he likes to prevent the scourge of aphides, instead of being obliged, as he formerly was, to trust solely to that most useful natural one, the *Fly Golding*, or *Ladybird* as it is sometimes called, which is found in Kent in much greater numbers than elsewhere; and being the Hop-grower's especial friend, it is, like the favoured birds or animals of some eastern countries, never killed on any account by him or his family. I fear the same consideration is not shown them by housewives, whose window-frames, &c., are often lined with them in autumn. Their utility in destroying the fly is unquestionable, and the abundance or otherwise of fly goldings in spring is often taken as a token of the crop; but there have been seasons when the severity of the attack of aphis was beyond the power of the ladybird to combat, and a failure, or next to total failure, was the result. Several years might be mentioned as being more fraught with blight than others, and there have been seasons when the Hop plant has recovered from the attack, and a moderate crop followed almost unexpectedly; yet unless this change takes place by the 20th of July it is thought too late to do any good that season. The period alluded to is the turning point, as it is called.

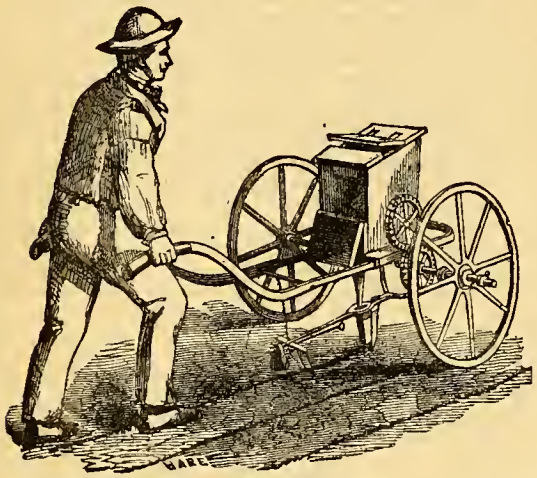
Before any attempt was made on the part of the Hop-growers to prevent the ravages of the aphis, attention had been drawn to another evil of equal extent, and one for which, unfortunately, there did not seem to be any natural antidote like the ladybird or fly golding; this was the *Mildew*, or what in local phrase is called the *mould*. This enemy does not attack the Hop till much later in the season, when the plant begins to show flower, or burr, when mildew is suddenly perceived. Every plant, healthy and vigorous as well as weak, is alike attacked; and as it attacks the Hop itself, and more especially the stalk which supports it, the growth of the crop is checked, and instead of swelling, as it otherwise would have done, it attains no more than one-fourth of its size, being often not worth picking. The mould on Hops and the mildew on the Vine are remarkably alike, only the Vine mildew is more under the command of the grower. The severe losses caused by the Hop mildew, some grounds being entirely useless year after year, led to experiments with sulphur, but in too many cases when it was first applied it was used too late to be of service, and the outcry raised by the Hop-merchants prevented many from employing it. At last some spirited individuals called public attention to it, and challenged those who asserted it was injurious to Hops for brewing purposes to prove their views. The lawsuit above alluded to, although unfortunate to the party engaged in it, enlightened the public on the matter, and experiments with sulphur became common. It soon became evident that its influence in arresting the progress of the mould was so important, that its use is now general. While all this was going on, the attacks from the aphis were as numerous as ever, and it was found that the dusting with sulphur for the mildew was of no avail in arresting the progress of the fly; on the contrary, many affirm that the fly thrives and fattens amongst the sulphur. Here, then, is another pill for our gardening friends to digest, and the question arises, Are we justified in mixing sulphur with anything that is intended to kill green fly? Does the sulphur neutralise the effects? However this may be in the Hop garden, it is thought the best practice to destroy the fly first, and then apply the sulphur.—J. Robson.

Magnificent Rhododendron.—In the centre of the great conservatory of the Royal Horticultural Society there stands at this moment what is probably the most magnificent floral object that has ever been beheld in Europe. This consists of a plant, or we should rather call it a tree, for it is upwards of 20 feet high, of the old Rhododendron arboreum which is now covered with innumerable trusses of deep blood red flowers, realising all that the late Dr. Wallich ever wrote of the glorious effect produced by it on the northern slopes of the Himalaya, where vast tracts are entirely covered with

it. The specimen in the conservatory, which is daily thronged by admirers, is now in its very highest beauty.

GARDEN DRILLS.

We do not remember a single garden crop that cannot be better cultivated if sown in rows than if sown broadcast. Rows allow the hoe to be more effectively used, and to have gutters between them for the application of liquid manures, a mode of manuring not nearly so well appreciated as it deserves.



For large extents of ground a wheeled drill, on the same principle as the agricultural drill, has been invented, but delivering only one row at a time.

For smaller beds, and for small seeds only, a soda-water bottle with a quill through a cork was devised.

Now we have one patented and on sale under the name of the "Sidney Seed-sower." We thought that this was in memory of Algernon Sidney, who was for levelling all things in the State, but we are better pleased to find that it is a ribute to the inventor's wife, who, we have no doubt, in some way is another instance justifying the Persian monarch's invariable query, "What woman has had to do with this?"

This neat little implement is intended to obviate "the difficulties sowers have to spread seeds with any regularity, particularly in wet or windy weather—it will distribute with equal regularity Peas, or the very smallest flower seed, in any required quantity, either broadcast or in drills or pots." This is effected by the slide being raised or lowered as desired, which is a very marked and effective characteristic.

PRINCESS LOUISE'S WEDDING BOUQUET.

In an old volume now before us we read, "Lady Ver, the Spring, is come, the nosegay-giver to weddings," for in those days such flowers as Maiden-blushes, Primroses, Pansies, and Violets were alone attainable.

"The bride
Made holy those, all others lay aside."

But in our days of richer floriculture the bridal bouquets are of more costly and more rare combinations. Princess Louise's was chiefly of Orchid flowers—Phalænopsis grandiflora, Odontoglossum Alexandræ, Odontoglossum pulchellum, Cymbidium eburneum, Lycaste Skinneri alba, Calanthe vestita alba—Rhododendron jasmineflorum, Bouvardia longiflora, Adiantum cuneatum, Gleichenia flabellata, white Roses, Gardenias, Orange blossoms, and Myrtles. The Orchids were in sprays, as being more effective than single flowers. The whole bouquet was margined with Honiton lace, white ribbon, and silver tassels.

The bouquet was furnished and presented by Mr. Charles Turner, Slough.

SYRINGING GRAPES.

It is a long time since I read anything so like a fallacy as that put forth on page 211, to the effect that syringing is not injurious to the bloom of Grapes, and I shall be much surprised if a man of such practical experience as Mr. Pearson commits himself to the support of Mr. Peach's assertion. The bloom of the Black Alicante Grape is thick and tenacious, and not so easily rubbed off as the bloom of some other kinds; but nothing is so likely to destroy the bloom of Grapes of any kind, or to utterly spoil their appearance, as the continual syringing of the Vines, not to speak of scouring the bunches "with a hydronette every day for weeks," as any of your readers can prove to their complete satisfaction by making the experiment. Further, the cleanest and softest water that can be procured for daily practical purposes will leave a dirty scum over the berries that will in itself make the fruit unpresentable at table. When a constant scouring of the foliage by the syringe is required, something is wrong that such treatment will not cure. Robust health and splendid crops of fruit can be secured without syringing after the bloom has come upon the berries, and such treatment is, therefore, not needful, nor to be recommended.—J. Simpson, *Wortley Hall.*

FRENCH HORTICULTURISTS' RELIEF FUND.

There can be no doubt that the efforts in this direction have received a rude shock by the melancholy events that are now taking place in Paris, and yet surely nothing can be more illogical than to hold back the aid contemplated on this account. The insurgents of Belleville and Montmartre are not to be confounded with the quiet hardworking horticulturists in the neighbourhood of Paris. And what, after all, is the principle of giving? for some people say, "What little thanks have we! When a vote of thanks to England was proposed in the Assembly it was shouted down, and some French people look upon our gifts as an insult." Now, I have read that we are to give hoping to receive nothing again; and even although gratitude may cost the receiver very little and be pleasant to the giver, yet we do not give expecting to receive it. May the time never come when we in England shall be looking to aid from others. But we have, let it be borne in mind, an element in London as dangerous and disorderly as that which has revolutionised Paris; and we should think it very hard then, if any outbreak of violence took place, that the sins of Whitechapel and Seven Dials should be visited on the quiet gardeners of Isleworth and Twickenham.

Nothing in this matter has been more gratifying to me than to see a class which I have always respected for their intelligence and good conduct—the gardeners of the various private establishments throughout the kingdom—coming forward, out of their not very large means, to help their brethren of the spade in France. It is the fashion with some to decry them. Their conduct in this matter will strengthen the hands of those who, like myself, have taken the opposite view.—D., *Deal.*

DINNER-TABLE DECORATION.

I preface my suggestions by observing, that I prefer the simple to the elaborate in this art, considering fruit, flowers, china, crystal, lamps, and candelabra, as the available and most elegant materials (with the exception on a sultry day of a block of Wenham-Lake ice, with a little greenery for a centre piece), and objecting to the effect of rockwork, tanks of gold fish, fountains, or the canal-like appearance produced by laying mirrors along a dinner-table.

We never put the fresh summer fruits on the table; it is difficult to find flowers which harmonise agreeably with the colour of Strawberries, &c. They are shown to full advantage when handed round after the ices, a sprig of Ice-plant being laid on each dish.

For the centre, if high, whether silver or glass, nothing excels the beauty of the leaves and long tendrils of Aristolochia Sipho, with or without a wreath of full-blown Roses in a tin circle laid flat round the stand.

The wine-coolers, Minton or Parian vases, or baskets corresponding, I would fill with full-blown Roses; or edge both the

centre and accompaniments with Fern or Lily of the Valley leaves, pinched so as to make them droop downwards, and put Roses or other flowers withio, or Fuchsias in all; or Wild Marguerites, Buttercups, and Grasses; or Asters, &c., during summer.

For autumn we use Bignonia radicans for a centre; also leaves of large Funkias, Dahlias, Azalea leaves when changing tint, variegated Laburnum or Plane, Mountain Ash berries, with sprigs of white Holly, and Ivy wreaths either for the centre or all.

The dishes containing dessert should always be garnished with something to suit the centre and vases.

We find pots of Primula, Solanum Capsicastrum, and Cineraria convenient for variety, but we should gladly use stove plants and flowers if we could command such. I only aim, however, at giving, from successful experience, a few hints which may benefit those, who, like ourselves, require and enjoy a great amount of table-decoration yielded by very moderate garden establishments, and, perhaps, some other correspondents will resume the subject for the advantage of the numerous class which it interests.—H. C.

SOME PREDATORY INSECTS OF OUR GARDENS.—No. 5.

The amiable poet Cowper, when describing one of his rambles near Olney, takes occasion to refer to an object familiar enough to most country folks, little as they may be acquainted with the dweller beneath:—

> "Hillocks green and soft,
> Raised by the mole, the miner of the soil.
> He, not unlike the great ones of mankind,
> Disfigures earth, and plotting in the dark,
> Toils much to raise a monumental pile
> That may record the mischief he has done."

So might it be said, in a measure, of a humbler creature still bearing the same name, with an addendum, only he does not raise a pile, but casts up slight ridges, or satisfies himself by producing such an effect upon the vegetation above, that it is obvious some enemy is at work beneath. The elevations he causes have been compared by some to those of the field mouse.

The mole cricket is a species historically interesting, and both its structure and habits deserve remark; nor is it, at least in this country, sufficiently numerous to cause us any very serious damage, though where it does occur it shows no want of ability and inclination. In France and other Continental countries mole crickets are familiar garden pests, the French name, *courtillière*, indicating the locality they most prefer. Though Wheat fields, and even grass lands, are the occasional resort of these insects, the kitchen garden and the nursery are their chosen spots. The species, scientifically called Gryllotalpa vulgaris, has an abundance of vernacular names. The churr worm, eve churr, fen cricket, and earth crab are the principal of these; the last, though owing its origin to the singular forelegs of the insect, is scarcely appropriate thereto. About Oxford also, Loudon informs us that it is called the "croaker." Though tolerably common in some counties, it is apparently unknown in others; the southern districts of England seem especially exposed to its incursions. I have not succeeded in detecting it in the vicinity of the metropolis. Its habits would have led one to suppose that it would be commoner in the fenny and marshy districts than it appears to be usually, but though partial to a swampy wet soil, and delighting to frequent the edges of streams, it is by no means aquatic, and is easily destroyed by pouring water in its hole when this is detected. Abroad they have also tried the expedient of burying vessels of water at different distances with some slight success. The three years stated to be required for it to complete its transformations also tends to cause an irregularity in its occurrence, and it is checked by various parasites, one in particular, noted by Rennie, a coleopterous insect, which contrives to make its way to the egg nest, and commits devastations amongst the embryo mole crickets. And if the extraordinary story related by Nördlinger is authentic, another check upon their multiplication might be imagined. He states that in a garden some person finding a mole cricket cut it clean in half with his spade. Some little while afterwards he looked round towards the spot, and to his surprise and disgust saw the head section had turned to the right about, and had commenced devouring the tail half! Remarkable, certainly, yet do not reject the tale, worthy reader, since it comes from Germany. But if a mole cricket would eat a portion of its own body, it would not, assuredly, be very scrupulous about taking a bite out of a relative, especially in the larval state and there is no doubt at least that they are not solely vegetable feeders in the imago condition, and part of their tunnelling is done in the pursuit of underground insects and other root-feeders. Gould relates that he fed a mole cricket for a time entirely upon ants.

The anatomy of the mole cricket, when investigated, shows that the insect is exactly adapted to the mode of life it leads. Unlike crickets and grasshoppers, the insects are unable to leap, the structure of the hind legs disqualifying them for exploits of this sort. The abdomen is heavy, and serves as a counterpoise, which prevents them from taking extensive flights in the air, though the wings are broad and delicately reticulated; in fact, they have no particular occasion for wandering far from their homes, except a vigorous process of digging and earthing-up has been set a-going, which would be by no means congenial to them. The first pair of legs serve at once to identify the species, even when it is in the hands of a tyro. They are furnished with very powerful muscles, and are broad and indented, the claws at the extremity of each being four in number, and directed outwards, corresponding to the mode of excavating pursued by the mole cricket. The body is also suited to a life so largely subterranean. Rennie adds that "the breast is formed of a thick, hard, horny substance, which is further strengthened within by a double framework of strong gristle, in front of the extremities of which the shoulder blades of the arms are firmly joined: a structure evidently intended to prevent the breast from being injured by the powerful action of the muscles in digging."

Another remarkable circumstance in the internal economy of this creature was first referred to in White's "Selborne," and has thence been often re-copied. From the position and form of the digestive system, physiologists supposed that the mole cricket ruminated as some quadrupeds. A description of the stomach by Professor Owen leaves the point doubtful. He compares the arrangement of that portion of the insect's interior to that of the graminivorous birds. There is a cavity (or crop, as it might be called) at one side of the gullet. Beyond this is a canal, which connects it with a small gizzard, into the lower part of which there open two pouches of some capacity; but as no one has yet been able to see the internal economy of the mole cricket in working order, the uses of the different parts thereof remain as conjectural as are the stories concerning its luminosity. The first inkling of this peculiar property is given by Kirby and Spence, resting upon a rather slender foundation. Some farmer of Norwich brings to a Dr. Sutton a mole cricket, and tells him that one of his people seeing a jack o'lantern pursued it, and knocking it down found he had got a mole cricket, as the specimen proved. I believe, in different forms, a story of a similar character has been repeated in some natural history periodicals, but I have not seen one so circumstantially set forth as to give full conviction on this point, though *primâ facie* the thing is possible. The vocal powers of the mole cricket cannot be called in question. Yet, though I thus speak of the sound, it is not a stridulation proceeding from organs in the head of the insect, but results from a friction of the wing cases with the hind legs, and it is thought that the males of the species are chiefly employed thus, being most noisy at the vernal season. The note is low and monotonous, and would, no doubt, be variously described by different individuals. Not having heard it myself, unfortunately, I cannot give my testimony, the predominant comparison being to the note of some of the owl species. It is during the present month that the larvæ come nearer to the surface, the rapidly advancing temperature reviving them from the torpidity in which it is supposed they pass the winter. They emerge from the egg during July or August, though whether there is a hatch every season is doubtful; probably not, if the larval life lasts through two years and some months more. The greater injury is done to the gardener by the larvæ, as I conceive, because their destructive powers must exceed those of the mole cricket matured, though the latter, through its tunnelling operations, may exhibit more markedly traces of its subterranean labours.

A very decidedly unpleasant insect is the cockroach, which, in its Latin name—viz., Blatta orientalis, keeps before our notice the fact that it was originally a foreign visitor, and has found our island such agreeable quarters, that its stay is likely to be prolonged indefinitely. Strange, indeed, some may hastily say, to name this as one of the enemies of the horticulturist, yet corroborative evidence in abundance could be produced. Out of doors, as well as in those regions of houses

and shops where fires are constantly kept up, and fragments of food are to be picked up by day or night, does the cockroach make itself busy, keeping as far as possible out of human ken, and evidently also regarding the light of day with a particular dislike. It is, perhaps, in Orchid houses that these insects do most harm, artfully secreting themselves near the boiler or under the pipes, also resorting to corners where flower pots are piled up. Equally satisfied, indeed, are they with the roots and leaves of those plants as with the varied provender yielded by the kitchen. McIntosh suggests that plunging the plant is an effectual way of "settling" the juveniles of the species, for they have an aversion to much water, though by nature, like the cricket, inclined to be thirsty, and their powers of swimming must be put down at a very low figure. Before Orchids are packed abroad for exportation into this country, some of the female cockroaches take the precaution to visit them, leaving a memento behind in the shape of certain eggs, which, during the voyage, yield an abundant progeny, the result being that whole cases are opened and found to be almost worthless on arrival.

I believe, however, that the cockroach does not confine its attacks to hothouses. Like the cricket, it migrates occasionally to the garden, when it can get there—for relaxation and change of diet probably! That cockroaches are not more frequently seen in the little plots which we denominate "gardens" in the vicinity of London, I attribute to the circumstance that so many of our kitchens are below the level of the ground, and the cockroach is not at all nimble in ascending or descending stairs. In certain suburbs of towns where the kitchens are built on the more sensible plan, I have noticed cockroaches about the gardens and squares in too great numbers to allow of the supposition that they had been dropped from a baker's barrow, or carried on the skirts of some female's dress. But warmth is so congenial to them, that I do not think it at all probable they will breed in the open air, and I have not seen them roving thus in their preparatory stages. The annoyance we experience from these insects is increased by the fact that all the year round, as I have proved by personal observation, they will come abroad, becoming rather inactive in very cold weather. The pupæ, as is usual in the Orthopterous order, are to be known by rudimentary wings, but they are not quiescent, and eat, drink, and flourish as much as the larvæ or imagos. The former of these cast their skins five times ere they have reached their full size. The female, as is now pretty well known, deposits her eggs in a curious case or pouch, out of which the young larvæ make their way by means of a solvent fluid, which dissolves the coating. Some French observers state, however, that they have noticed the parent cockroach assisting the young to extricate themselves. I fancy the period of emergence is about August—at least in September or October I have noticed many little fellows of diminutive size hurrying about, and now there are a number of larvæ about half grown mingling with the adult insects, which one always sees about in greater or less number. No doubt they live some months in the perfect state, and, indeed, it is possible the cockroaches of one season live on until those of the next have passed through their different stages.

This is one of the insects exposed to continual experiment on the part of man, and were it not for the numbers that are annually slaughtered by poison or by traps, or the still more simple method of crushing with the foot, no doubt they would increase so as to become a considerable annoyance, even to the gardener. Some of the plans for their destruction which answer in the kitchen are less available in the Orchid house, though the plan of entrapping them there by various receptacles of some sweet fluid (one writer recommends beer, or warm water with a little ginger or nutmeg—swindling them, in fact, with a supposed glass of toddy), will answer in both, and once precipitated into this compound, be it what it may, they are not likely to get out again if the sides are perpendicular. Access to the edge of the vessel must be given; but, says one, not by stripe of paper, because cockroaches dislike the sound of their own footsteps! All I know is that in a closet in my house containing loose paper, the rustling they make there at certain times does not indicate much alarm at noise of that sort. Amongst the various poisons tried are the leaves of the Elder and Poppy, plaster of Paris, red wafers, and tolerably efficacious phosphorus paste, and the "insecticide" powders, each having its advocates.—J. R. S. C.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.—His Serene Highness, the Prince of Teck, has consented to preside at the ensuing anniversary dinner of this Society, and has named Tuesday, the 20th June, for that purpose.

TREE-KILLING SOLUTIONS.

THE editorial remarks made at page 124, to the effect that the cause, or at least the probable cause, of the death of six Vines out of thirteen in a vinery arose from the solution with which they were dressed being of too strong a nature, will derive additional force from the following facts.

It was the custom of the gardener under whom I served some years ago, to apply to his Vines and Peach trees a dressing formed of water, sulphur, lime, soot, and tobacco liquor, boiled together for some time, and then mixed with clay, in quantity sufficient to render the whole of the consistency of paint. One year it was made stronger than usual, the early vinery getting the first of it, then the late vinery, and the remainder was used for the Peach trees. Now, as to the effects produced, the Vines in the earliest house "started" without causing the least uneasiness as to there being anything wrong, owing, perhaps, to the wood being better matured when the paint was applied, or to the latter being washed off with the syringe before mischief was done. When the time came for the Vines in the second house to commence growing, affairs looked anything but promising, for although the syringe was used without stint, and everything that could be thought of was done to induce them to start, a very large proportion of the buds remained as they were when painted. Matters were still worse in the Peach house, which contained a Royal George and a Noblesse Peach and one Nectarine; this and the Royal George came in for the worst of it. Excepting two or three shoots, the upper half of these two trees was completely killed. The Noblesse escaped almost scathless. Very probably the reason of the difference of the effects produced on those trees growing side by side, was the Royal George producing shoots of a grosser nature than the Noblesse did. As a proof that the trees were all right otherwise, the Royal George completely filled up the trellis during the same season. It need scarcely be added that the usual dressing was dispensed with the next season. Whether the trees are painted now or not I cannot say, but it is very probable that the old proverb holds good here, that "Once bit, twice shy."—R. P. B.

THE PENALTIES OF RASH DEEP TRENCHING.

THAT trenching is one of the most important of garden operations is well known. No practice has afforded more successful returns upon the outlay; no garden is properly managed where the practice is not adopted. It brings into action the latent powers of the soil. Excellent and indispensable, however, as the routine undoubtedly is, if indulged in to excess, like many other good things, it will result in evil and not good. But why pipe a tune which every gardener knows by rote? Well, not quite everyone, but those who do will be the first to tolerate the refrain for the sake of those who are not practically acquainted with the penalties attached to trenching, which is sometimes thoughtlessly or incorrectly carried out.

Not long ago I saw a young gardener breaking up a piece of pasture; it was for a Strawberry bed; he worked with a will, nerved by the hopeful prospect of having his reward and triumph—his hopes were vain. A foot of this soil was excellent, the foot beneath was hungry and heavy. The good foot was being put down to the bottom; the bad foot was brought *en masse* to the top. Instead of the soil being thus managed, if it had been worked 18 inches deep, 5 or 6 inches being dug over at the bottom of the trench, with some sound manure added, he would have had fine Strawberries, with not much more than half the labour he gave in producing failure and disappointment. This gardener was a reader of the Journal, and reckoned he was improving on the advice there given.

Another case more serious than the last. Three years ago an amateur erected a large vinery. My advice was solicited as to the border-making. The soil was good for about a foot deep. Beneath this was a nasty, heavy, hungry loam, approaching to clay. I advised this not be touched, but counselled the addition of another foot or more of turfy loam, mixing it with the surface foot of good soil, which would have produced good Grapes. "But why not trench 2 feet deep?" quoth the amateur. I gave the reason, and lent him some Journal evidence confirmatory. He gave as his judgment that it was "gardener's fuss," on which I left him to his own resources. The ground was turned over, the good foot going to the bottom, with loads of Cabbage

stalks and similar refuse collected from all the cottage gardens in the village, the bad soil being brought to the surface. This was to show the gardener how to grow Grapes without fuss. The trenching was finished, and the Vines purchased. Would I plant them? No. I would plant one as a sample. I did so, pegging 6 or 8 inches of the cane on the surface of the border, and covering with 5 or 6 inches of manure. What was the result? Why the roots of the Vines died absolutely. The Vines, however, did not quite die, but emitted roots into the surface-mulching from the few inches of the canes which were pegged on the surface of the border. This was much as I anticipated. Since my refusal to plant the Vines, what was to be done next? If I would only tell him, my advice should be carried out to the letter, at whatever cost. It was my turn now. I had the loamy crumbs of the trenched ground taken quite away, and had in every particular a good border made. Some of the old Vines I planted again, entirely cutting off the old roots, relying on the roots emitted from the canes for sustenance, the other Vines were thrown away, and new ones bought. The Vines are now in a fine state. They were quite to my satisfaction until I saw the record of the last and best of Mr. Thomson's efforts. The loss resulting from this stupid example of deep trenching is, putting it at a ridiculously low computation, at least £50, there being nearly a two-years loss of crop from fifty Vines, besides the cost of labour. A tangible penalty for deep trenching, surely.

I have yet another instance involving a larger pecuniary penalty than this. About fifteen years ago a gentleman bought a small estate. A portion of this was to be devoted to garden purposes. He persisted, in spite of urgently pressed remonstrance, in having it trenched from 2½ to 3 feet deep, vainly supposing thereby to eclipse his neighbours in the excellence of his produce. About a foot of the surface was fairly good soil, the rest of a character which would probably have made very good bricks. This piece of land was less than an acre in extent. The cost of the deep trenching was over £60. This expense had been incurred in burying what bit of good soil there was, and in bringing to the surface 18 inches to 2 feet of soil, sour and hungry in the extreme. When finished the plot would have been dear to buy at half the money it cost to trench. The first year it would grow nothing; the second ditto. What was to be done? Trench it over again was the advice given, but of course rejected. It was sound advice, nevertheless, and would have been cheap in comparison with years of after-outlay and loss of crops. Tons upon tons of lime, soil, manure, &c., have since been added. To this day it is far from being good garden ground. Had this ground been worked 18 inches deep, it would not have cost one-quarter the amount in labour, and would have afforded one hundred times the produce. Instead of loss it would have brought profit, and instead of disappointment pleasure. I narrate these examples which have come under my immediate notice, as warnings of dangers to be avoided. They tell their own tale, and teach a lesson which may be profitable.—J. W., *Lincoln.*

RAISING EARLY PEAS.

The following plan I have practised for fourteen years without a single failure.

I make use of a Cucumber frame 6 feet by 4 feet, filling it about the middle of February with strips of turf 3 inches wide, and cut so that three of them stretch the width of the frame. I place the turf grass-side downwards on about a foot thick of horse dung, which produces a gentle heat; then with a small peg I make for the Peas four rows of holes in each strip 3 inches wide, the holes being about 1 inch apart the other way. When the Peas are sown and the frame is full, I put over them an inch deep of soil, and the plants will be fit to plant out in a month.

In planting out I lift off the frame, take out the lengths of turf, through which the Peas will have rooted, and place them in a barrow. I dig the ground and plant as I go on, sticking the Peas the same day. I have known them take to the sticks in four days. I have this year eleven rows on a 12-feet border, from a frame of the above dimensions.—G. Fox, *Knowle Hall, near Birmingham.*

Fatal Fungoid Parasite.—We regret to learn that the fine specimen of Pandanus odoratissimus in the Botanical Gardens at Glasnevin, near Dublin, has been completely destroyed by the attacks of a fungus, in all probability the same that has destroyed the Screw Pine in the Breslau Gardens. The Glasnevin plant was nearly fifty years old.—(*Nature.*)

A FEW WORDS ABOUT HOLLYHOCKS.

The Hollyhock is not so generally grown as its decorative qualities entitle it to be. When grown amongst shrubs in situations moderately sheltered, few plants produce a finer floral display during the autumn months. The great drawback to its cultivation is the liability of the plants to get broken with the winds; but if secured when 18 inches high to suitable stakes, this objection is at once got over. At planting time give each plant a few spadefuls of rotten manure, and if possible a little fresh soil; press the earth firmly round the plants; and if the ground is dry, give a good watering. In due time stake each plant, and as the stems advance in growth, secure them thereto with strong ties of matting. If the above simple hints are attended to, the result in most instances will be satisfactory.

When Hollyhocks are grown for exhibition, they must have a plot of ground devoted to themselves; let the situation be as sheltered as possible, but never near to anything that would in the least obstruct the noonday sun or a free circulation of air. To produce spikes such as are seen at some of our horticultural shows, requires a rich soil. To secure this, let the ground be trenched in autumn, adding, as the work proceeds, a liberal supply of good manure. When the trenching is complete, give the surface a dressing 2 or 3 inches thick of the best manure procurable; the winter rains will wash the best parts of it into the soil, and when planting-time comes, a slight forking is all that is required to make the bed in readiness to receive the plants. The plants should not be put out until all danger from severe frost is passed, say the end of March or beginning of April. Let the plants stand 3 feet apart in the lines, and 5 feet from line to line. When finished planting, if the ground is moderately dry (which it should be, as it is a bad plan to plant when the soil is over-wet), make the surface rather firm by giving the whole a gentle treading with the feet. Place at once over each plant some Spruce or other evergreen branches, as a protection against frost and cutting winds; as if they get frozen to any extent, the spikes are never so fine. As soon as all danger from frost is past, remove the protection, examine each plant, and see that all are firm in the soil.

Let only one stem rise from a plant, and nip out all laterals as they appear. Never allow the plants to suffer for want of water; and as soon as flower buds are formed, mulch the beds with rotten manure. I prefer this to giving manure water, as the latter, unless applied with judgment, has a tendency to make the plants grow by fits and starts, thereby causing irregularity in the build of the spikes, a fault which neither length of spike nor size of blooms will compensate for. In most instances two flower buds will start from the axil of each leaf; nip out the smaller of the two; and in any case of crowding, thin to the requisite number. During the three weeks preceding the show, the spikes must be protected from rain and strong sun. This, in the case of the Hollyhock, is not so readily accomplished, but it is necessary to the production of clean spikes; and the cultivator must not neglect it, as by doing so he will destroy his chance of attaining the end in view.—J. H.—(*The Gardener.*)

THE PRIZES AT SOUTH KENSINGTON.

ARE ORCHIDS INTRINSICALLY BETTER THAN OTHER PLANTS?

Although I exhibited largely at the last meeting of the Royal Horticultural Society at Kensington, I did not compete for the prizes. *I did not even enter my collections for competition,* and I marked my collections, "Not for competition." Nevertheless, I was surprised to find my large collection of Hyacinths marked "second prize." On passing to the only other large collection of this flower, I found them also marked "second prize." Where, then, was the "first prize?" In this dilemma I appealed to a friend who replied, "Oh! it is quite right, the Orchid is placed first, the Hyacinths second, and the Camellias third." Now, with all my respect for authority, I cannot, after fully weighing the matter, perceive the logic of this. How can an Orchid be judged against a group of Hyacinths, or the latter against a group of Camellias? As well might a bullock be judged against a sheep, or the latter against a flock of geese, giving the former a first prize on the ground that it was bigger or more costly, or that beef was better than mutton. I do not object to receive an extra prize, or a special prize, whenever the judges may think it deserved, but I do object to a first-class production

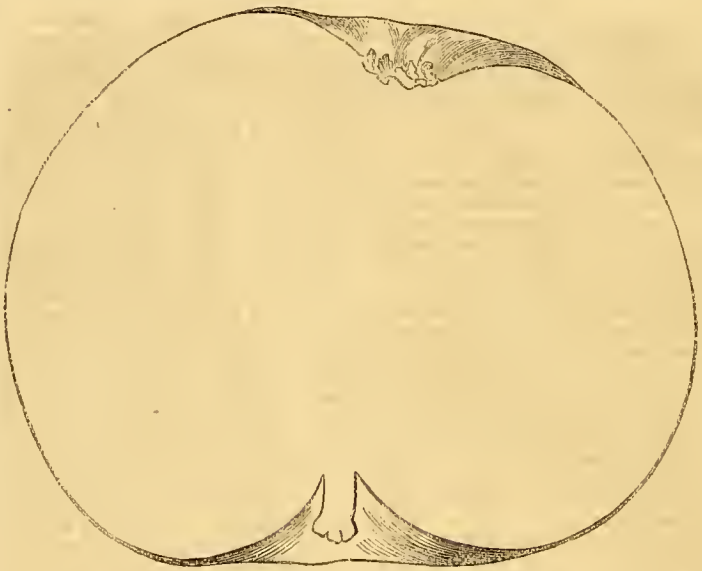
being labelled second or third prize, because this conveys to the public the impression that the object is second-rate, or third-rate. This I apprehend injures rather than promotes the interest of the exhibitor. Why not in these cases label the objects "extra prize," or "special prize," as the case may be?

But are Orchids intrinsically better than other plants? I have no wish to depreciate those plants. I admit their variety and beauty, and admire them greatly, and the plant in question was in my judgment worthy of a medal. But are they intrinsically better than other plants, or is it their costliness or a mere matter of fashion that make some people consider them so? A, who is a luxurious man, fond of warm climates and delicate perfumes, says "Awkids" are the aristocracy of the vegetable kingdom, and all other plants are "cads;" but my neighbour Z, who is a bluff stalwart Englishman, who could hardly be tempted to put his head into a hothouse, says the Rose is the first of flowers. As these are both educated men and men of sense, to whom shall we appeal? What I deprecate is the efforts made to build-up one flower at the expense of others.—WILLIAM PAUL, *Paul's Nurseries, Waltham Cross, N.*

CROFT-EN-REICH APPLE, OR GALLOWAY PIPPIN.

A FEW weeks ago Messrs. Backhouse & Son, of York, sent to the Fruit Committee of the Royal Horticultural Society, an Apple which they called the Galloway Pippin. It was so named from having been brought from that province in Scotland. The Apple was so highly approved of by the Committee, that it received a first-class certificate as a cooking Apple.

The fruit is large, roundish, obscurely angular round the basin of the eye. Skin smooth, of a greenish yellow colour on the shaded side, and of a pale thin red, gradually blending into the yellow, on that exposed to the sun, strewed with russet dots, and here and there traces of russet. Eye large and open, like that of Dumelow's Seedling, with short depauperated segments set in a pretty deep basin, which is uneven. Stalk very short, imbedded in the deep cavity, which is smooth. Flesh yellowish with a greenish tinge and somewhat perfumed, tender, briskly flavoured. It cooks admirably and has a fine flavour. A first-rate kitchen Apple, in use till the end of January.



Croft-en-Reich Apple, or Galloway Pippin.

Since the fruit was exhibited we have received the following from our friend, Rev. William Kingsley, of South Kilvington, to whom it was communicated:—

"The Croft-en-Reich Pippin grew from time immemorial in an orchard now called Croft Angry, adjoining the town of Wigtown, since laid out as a grass field, and all the trees cut down. I recollect the two old trees on which these Apples grew nearly seventy years ago, and then they had the appearance of being at least a century old. The fruit is of the shape, and when ripe much the colour of an Orange; a well-flavoured dessert Apple, but its principal quality is its keeping, as I have seen the fruit, or rather had them, in perfect preservation up to the middle of June. When I first know them they were used here in preference to every other kind of Apple, and about forty years ago they became so generally known and appreciated, that grafts were sent to all parts of Galloway, and even to a greater distance, and there is an increasing demand, although the old trees are long since gone.

"In the present year this Apple gained a first-class certificate at Kensington, under the name of the Galloway Pippin, so that it may now be considered famous.

"The grafts now sent are from trees in my own garden, where they have been for more than forty years, and have hardly ever failed to bear a crop. The trees put out very strong branches, and with me do best as standards. Their greatest fault is liability to canker at the joints. I think the Apple may be traced to monkish days, the orchard being close to the ruins of the old church and monastery.—J. S., *Wigtown.*"

NOTES MADE DURING A TOUR IN IRELAND.—No. 7.

POWERSCOURT, CO. WICKLOW.

POWERSCOURT—one of the noblest residences of one of Ireland's most noble families, the Earls of Powerscourt, and situated in one of the most charming of Irish counties, Wicklow. The county of Wicklow is very mountainous, and, consequently, presents much diversity of character; in many places it is truly noble in its wild grandeur, reminding one very much of good Scottish scenery, only that of Ireland is far more richly clad in verdant green. Round Powerscourt there are many lovely spots, much frequented by the good folks of Dublin. Powerscourt is about four miles distant from Bray, a highly-fashionable, cleanly little town, the Brighton of Dublin, and the great resort of the Dublinites, who reach it in about an hour's ride by rail.

Setting out from Bray, then, per Irish car, the universal mode of travelling in Ireland, we are soon at the gates of Powerscourt. Here we pass between two lines of the loveliest of all the Fir tribe, Pinus insignis, so beautifully green, and graceful Deodars, ranging between 25 feet and 30 feet in height. How very effective these trees are now, and in time to come how much more so will they be! The gate, surmounted by the arms of the lords of Powerscourt, is very tasteful, and immediately gives one the idea of something grand within. Driving along the avenue on the ridge of the hills for about a mile we pass some grand clumps of fine old Beeches, catching glimpses there of the lovely valley of the Dargle, lying far below embosomed in richly verdured woods and meadows rising up the slopes of the hills on either side, the view being closed in by the bleak sterile summits of the North Wicklow mountains, the most conspicuous of which are named respectively the Great and Little Sugarloaf. Approaching the Castle we pass remarkably fine Beech trees, and a little on one side a giant old Ash—a real monarch of the forest, although now somewhat decayed, but still possessed of a good deal of vigour. It is here cared for, surfaced, and top-dressed like one of Mr. Dunn's prize Azaleas, and with such care it may last a few generations yet. There is something very noble in a grand old patriarch like this, with a trunk about 28 feet in girth and 90 feet in height. How aged it must be! Quite suddenly we have to pull up in front of the Castle—a noble structure of hewn granite, having in front a fine, broad, sweeping lawn, with the view expanding over many rich meadows and green woods, with the mountain peaks in the distance. A little way further on the left one arrives at the gardens; and here being met by Mr. Dunn, Lord Powerscourt's able gardener, one

of the foremost men in his profession, Mr. McDonald, from the Phœnix Park, Mr. France, forester, &c., before inspecting the gardens I took a drive out a distance of three miles to see the far-famed Powerscourt waterfall, which is situated at the head of a deep and well-wooded glen in Powerscourt deer park, and is one of the great sights of the county of Wicklow.

This splendid waterfall is formed by a mountain stream, the Glenislorane, its waters being collected from the sides of the adjacent mountains. When in flood the waters pour over the tremendous precipice, upwards of 300 feet in height, in one unbroken sheet of white foam and spray, sublimely contrasting with the dark overhanging woods and rocks, forming one of the grandest sights to be seen in Ireland, or, perhaps, in the three kingdoms. The valley through which the river flows after the fall is beautifully wooded, the steep, almost perpendicular rocks on one side being clothed to their summits with many beautiful trees, growing out, it would seem, of nothing but the solid rock.

The Powerscourt Waterfall.

Returning, all along the route were many single specimens, lines, and clumps of the choicest Coniferæ, which seem to have been planted with the greatest profusion everywhere about the place during the last few years, and nearly all seem to be thriving well. How beautiful is the appearance of Pinus insignis in its bright lively pea green colour in contrast with the darker shades! In a very few years, if taken care of, the trees will form a sight of themselves worth going all the way to Ireland to see.

Essaying now to speak of the gardens proper, where the high cultural ability of Mr. Dunn is so well displayed, I will take a hurried run through the various ranges of glass houses, which are rather extensive, and present many special features of attraction. The collection of stove plants, &c., is altogether splendid, winning as they do for Mr. Dunn many prizes at the Dublin exhibitions. Fruit, also, is extremely well attended to.

But, to particularise a little, I have to notice first a range of half-span houses, some 160 feet in length, about 14 feet wide, and 12 feet high, of new and superior construction. This range is in four divisions, No. 1 being devoted to Figs but recently planted on a raised bed in the centre, 4½ feet wide and 18 inches deep, the trees trained to a wire trellis along the roof. Nothing could be more promising than the appearance of these trees. On the shelves were numerous small plants, grown for the decoration of the conservatory. I noticed here a good batch of young Chamærops excelsa and humilis, which it is intended to plant out in the pleasure grounds, they being, as Mr. Dunn stated, quite hardy here. Division 2 was devoted to Melons and Cucumbers on one side, and on the other was a sort of propagating pit. The former seemed to be doing well, although the house is far too lofty for such things. In the winter this house is used for the forcing of Asparagus, Sea-kale, Dwarf Kidney Beans, &c., the bed being heated with hot-water pipes. Along the front shelves were fine lots of plants for winter decoration, such as Poinsettias, Euphorbia jacquiniæflora, Dracænas, Crotons, &c. The third division is a plant stove, in which I noticed many fine specimens of fine-foliaged plants, Ferns, and Orchids. Amongst the former Anthurium cordifolium stood out well, having leaves 34 inches by 26 inches; Cyanophyllum magnificum, grown as it ought to be from cuttings annually, was very fine, upwards of 7 feet in height, and clothed with splendid leaves, 39 inches by 25, to the very surface of the pot; Sphærogyne cinnamomea, over 5 feet high, equally perfect and beautiful; Sphærogyne latifolia; a huge plant of Dieffenbachia picta, 8 feet in height and 9 feet in breadth; Alocasia macrorhiza variegata, A. Veitchii, Pandanus Veitchii, Pandanus javanicus, nine or ten varieties of those now popular plants, Marantas, amongst which Veitchii showed up well; Dianella purpurea with its graceful blue berries, Caladiums in variety, Nepenthes, Dracænas, and Crotons. Twining about the roof some of the climbers looked exceedingly well, such as Hoya imperialis, just a mass of bloom, Allamanda Schottii, A. grandiflora, Vanillas, Ipomæas, &c., and along the front a few good Orchids, as Dendrobes, Cypripediums, and Odontoglots. Division 4 is another plant stove, and in this there were likewise many fine plants — a noble plant of Thenphrasta imperialis, 9 feet high, clothed to the ground; Pandanus elegantissimus, very large; Cycas revoluta, good; Fittonia argyroneura, Gymnostachyum Verschaffelti, Croton, Dracænas, Marantas, and a fine collection of Lycopods doing well in 14-inch pans. Cissus discolor, hanging in loose festoons all over the roof, intermixed with Clerodendron Thomsonæ, Bougainvillea, Allamandas, Passiflora princeps, and Stephanotis, looked exceedingly pretty.

Leaving this range we cross over a large, open, gravelled yard, where it is intended to have pits for Melons, Cucumbers, and bedding plants. Here were placed a great quantity of Strawberries for forcing, Keens' Seedling being the principal early sort used. Around this yard are all the usual garden offices, beginning with Mr. Dunn's house, which, with all due respect, I say is not worthy of Mr. Dunn (although a bachelor) nor of Powerscourt. All the other buildings are very complete, and well adapted for their intended purpose; gas and water are at command wherever required, affording great convenience at all times. This ought to be far more frequently the case than we find it, even in the best gardens of this country.

Passing on I entered the principal range of glass by the back of the conservatory, which forms the centre of the range, being flanked on either side by two vineries—lean-to's, and having at each end a span-roofed plant house. The conservatory is a fine, large, roomy house, 50 feet long by 35 feet, and about 20 feet high. The roof is in three spans, supported by eight

metal pillars, against which climbers of all kinds are planted, and trained up over the roof, from which they hang in graceful festoons in great profusion. They are apparently allowed to ramble almost at will, although still completely in order, and they have thus a very pleasing effect. Amongst others, Tacsonia Van-Volxemi, Ipomæa Learii, and Mandevilla suaveolens were extremely handsome; of Passifloras there were Belottii, cærulea racemosa, amabilis, cardinalis, Colvilli, edulis; also Rhynchospermum jasminoides, Tacsonia manicata, ignea, mollissima, Lapageria rosea, Plumbago capensis, Kennedyas, Rose Maréchal Niel, and Bignonias—decidedly the best display of climbers I have seen. In the centre of the house there is a large bed, in which many of the larger plants are growing planted out; round this there is the pathway, with shelves against the sides. The whole house was replete with blossom and fine gay plants. In the centre bed, directly opposite the entrance was a very handsome specimen of Dicksonia antarctica, with a 7-feet stem and immense spreading fronds. Other permanent occupants of this bed consisted of some fine Palms, Camellias, Oranges, Luculias, and Brugmansias, with smaller flowering plants in pots placed along the edges of the path, the whole surface being covered with a beautiful green carpet of Selaginella denticulata, which wonderfully freshens up the appearance of the house.

On the right hand and on the left there are two vineries, which we pass through at present, and note first the west-end plant stove. This is span-roofed, 36 feet by 18, and about 14 feet high, having a bed in the centre much in the same style as the conservatory. Here there were many fine plants, with which Mr. Dunn makes such a grand display at the Dublin exhibitions, and carries off so many honours. First I noticed a perfect Medinilla magnifica, 8 feet high, and as much in diameter, which Mr. Dunn stated had in April last 187 of its beautiful racemes of rosy flowers upon it at one time—that was a sight; Stephanotis floribunda on a balloon-shaped trellis 6 feet by 4 feet, shown at Dublin last year with 220 trusses of flowers upon it; Clerodendron Balfourianum, 6 feet by 4; Allamanda Hendersoni, Schottii, and cathartica—fine plants on large balloon trellises; Franciscea calycina major, F. eximia, Meyenia erecta; Croton angustifolium pictum and variegatum, all very fine, large, show plants, besides many other smaller plants interspersed, such as Dracænas, Begonias, Ferns of all sorts, and on the side shelves numerous Gardenias, Ixoras, Epiphyllums, and Gesneras growing for early spring display, for which they are in great demand. The rafters, columns, and roof were nicely draped with climbers growing and flowering with great luxuriance, such as Stephanotis, Clerodendron Thomsonæ, Thunbergia Harrisii, Ipomæa Horsfalliæ, Passifloras cardinalis, kermesina, and princeps. Great tufts also of Epiphyllum appeared here and there, as if springing out of the bare rafters; this was worked on a long thin stem of the Pereskia, which was scarcely seen, and when seen appeared scarcely capable of carrying such a weight. How charming this must look at Christmas when in flower! At the warmest end of the house Passiflora quadrangularis was luxuriating, flowering and fruiting freely. This is one of the best edible Passifloras. The fruits (Granadillas) are rather prized at Powerscourt, although not by the writer.

Passing on to the extreme end I entered a span-roofed greenhouse corresponding to the stove just noted. Here there were fine Acacias, Epacrises, Ericas of sorts, Chorozemas, Aphelexes, Phœnocoma prolifera, Genetyllis, Pimeleas, Polygalas, and all the usual selection of cool greenhouse hardwooded plants, which are far too much neglected at the present day in the fashion for big, easily grown, leafy plants. Here also is a fine Araucaria excelsa, a most elegant conservatory tree, likewise A. Cunninghami; and placed just under the stage, growing under large bell-glasses, were three splendid specimens of that most lovely Filmy Fern Todea superba, with fine large fronds, showing that it was thoroughly at home in such a situation. On the side shelves were numerous greenhouse plants, fine examples of Lilium auratum, Cordylines, Pleromas, Kalosanths, Statices, &c.; and again a profusion of climbers, such as Lapageria rosea, Clianthus Dampieri, Mitraria coccinea; Passiflora amabilis, P. Neumanni; Kennedya Marryattæ, and several of the new kinds of Clematis, almost exhausting the whole stock of climbing hothouse plants, in which Mr. Dunn seems well posted up.

This completes the circuit of the plant houses; and on passing on to the terrace in front to look at the range I was informed that it is yet unfinished, it being intended to add a Peach house 56 feet long to each end, so that when completed this will certainly be one of the noblest ranges of glass in Ireland, and under the management of one of the best of gardeners.—B.

GARDENERS' COMPANY.

From the "City of London Directory" we have the following particulars respecting this Company:—

Charters.—This Company was incorporated by the 3rd James I. September 18th, 1605: re-incorporated by the 14th James I. November 9th, 1616. The bye-laws for their good government were confirmed by the Lord Chancellor, Lord Treasurer, and Chief Justice of the King's Bench, July 1st, 1606.

Arms.—The field a landscape, the base variegated with flowers; a man proper, vested round the loins with linen argent, digging with a spade, all of the first. Crest: on a wreath, a basket of fruit all proper. Supporters: two emblematical female figures with cornucopiæ, representing Plenty. Motto: "In the Sweat of Thy Brow shalt Thou Eat Thy Bread."

Fees Payable.—Upon taking up the freedom; by patrimony or servitude, £1 10*s.*; and by purchase, £1 17*s.* 6*d.*

[This Company has ceased to exist.]

REMEMBER SOILS, SITUATIONS, AND SEASONS VARY.

Let me say a few words on the differences of opinion amongst writers to the Journal about the good and bad qualities of bedding-out plants in general.

One writer praises up the good qualities of the Golden Pyrethrum, and says what a valuable plant in the flower garden it proved to be with him. This it has proved with me, and it was much admired by all who saw it last summer. In the following Journal another writer says, "Away with it to the rubbish heap, he would not grow such rubbish again." I can only say I intend growing much more of the "rubbish" than I did last year, the ladies so liked it.

Some differ in opinion as to the qualities of bedding Geraniums; some condemn one sort, others praise it to the skies. In my opinion some sorts do well in one place, and may be a failure in another, because the climate is different, or the soil too rich, too poor, too dry, or too shallow, and my advice to those interested in such things is not to listen always and believe for true what is written, but to give all such bedding plants as they may have a fair trial before casting them away to the rubbish heap. I was told by a lady, who saw my Pyrethrums last summer, then looking so fine and yellow, that where she had just been at the sea-side the Pyrethrum was as green as grass, thus showing it does not answer so well near the sea as it does farther inland. Much allowance must also be made for differences of season.

In conclusion, let me ask of gardeners and other writers to your valuable paper to give us their advice in future, and show how plants about which they write can be grown and managed in the best way possible in a garden where there is only a small quantity of glass, with limited time to look after them. It would be very useful to a great many amateurs, and to gardeners like myself.—Robert Giddings.

JOTTINGS IN AMERICA.

American agricultural papers are numerous, and mostly prosperous. One feature that marks them peculiarly is the amount of attention given to improvements in menial operations. Descriptions, often with illustrations, of little contrivances to lighten or soften such labours as sifting ashes, making fires, cleaning stables, carrying water, &c., are among the most favourably commented on, and most highly valued.

This is not surprising, when we think how scarce domestic help is here, and how little to be depended upon. Those who are hired soon find their way from the position of a servant to the state of an independent owner; but, this attained, they are obliged still to be servants to themselves. Thus it is that well-off farmers, or town-dwelling mechanics and tradesmen, whose wages or gains enable them to supply their homes luxuriously, and who do so, are in most cases obliged to be their own drudges, especially if they are out of the way of the influx of emigrants. To this large class every device that will help them through their "chores" is an object. The necessity of doing personally all the dusty and dirty jobs that so discomfort tender hands and tidy clothes, and of doing it without occupying too much of the time that is wanted for other affairs, and without leaving

damaging marks, is the trial of life which meets those who would avoid that greatest trial—the using and managing of domestic servants in America. The whole world of American house-mistresses has been excited by the accounts given by their sisters in California, of the docility and aptness of the Chinese who have been crossing the Pacific to San Francisco in search of better wages. These Chinamen are reported to do washing, ironing, sewing, baking, *et id omme*, with a neatness and quietness that is in strong contrast with the ways of stormy uncertain Bridget or clumsy Gretchen. Whether these Chinese will make gardeners does not yet appear, but it is likely that they will. The negroes do nothing of that kind, but rough slow hoeing. They have no taste for tidying up. Litter and flauntiness are their states of Sunday perfection.

Gardeners in America have generally too hard a position to be long endured where independent ownership of land is so easily attainable. Where a gardener can be afforded there are horses. The gardener must attend to the stable, and at times be coachman; between this and the kitchen and the sun he is well sweated. The sun brings up rapid weeds, and drinks away moisture to a degree most afflicting to a gardener. It even affects the temper of the parlour, and thus reacts on him; for there is naturally far less of that real gentleness and gracious benignity among the wealthy of America than among the old and true *noblesse*. The States now swarm with *nouveaux riches*, who do not lose their push and petulance, when they have built up an establishment with some of their war-gotten wealth. The management of this establishment is usually found too harassing, and as a resource, hotel-boarding is tried. This hotel system ignores gardening almost altogether, and it is a great misfortune that circumstances should have rendered it so popular as it is among the monied families of America. It cultivates in-door comfort, convenience, and splendour to a superb perfection; but out-door embellishment is nothing but a path, and sometimes a shade tree, and a surrounding wild. The climate has much to do with this. Both the blazing heat of summer, and the piercing cold and deep snow of winter check out-door enjoyments during much of the year. All this helps to continue, and even aggravate the raw, broken, scattered appearance of every road and field, excepting some well-kept private grounds and public parks—little oases in a vast desert. This littery tumbling appearance of things, and the more or less burnt condition of everything that is green in June, and often only in June, is more picturesque than pretty, and very uncomfortable-looking to one accustomed to value tidiness.—PENNSYLVANIA.

FRUITERERS' COMPANY.

FROM the "City of London Directory" we learn the following particulars respecting this Company:—

Charters.—James I. upon a petition being presented to him, granted this Company Letters Patent of Incorporation, January 9th, 1606, in the third year of his reign. Re-incorporated by 2nd James II. June 19th, 1686, but this was in the next reign annulled. Bye-laws for their guidance were allowed by the Lord Keeper and Chief Justices, April 7th, 1759.

Arms.—Azure: on a mount in base vert, the tree of Paradise environed with the serpent between Adam and Eve, all proper. Motto: "Arbor Vitæ Christus, Fructus per Fidem Gustamus."

Fees Payable.—Upon taking up the freedom: by patrimony or servitude, £4 10*s.*; by purchase, £7 7*s.*—Upon admission of the livery, £20.—Upon election to the court, £1 11*s.*

Charities.—Mr. Bedford left £5, the interest to be distributed to the poor of the Company.

James Frankland gave by will, the 30th November, 1826, £100 in trust, the interest to be given to the poor of the Company, on the 25th of January in each year.

WORK FOR THE WEEK.

KITCHEN GARDEN.

LET the *Asparagus* beds be well forked over if not previously done. As soon as completed throw a thin sprinkling of salt over them, and dig into the alleys as much raw manure, leaves, or weeds as can be spared. This plant feeds more by the extreme points of the roots than at the surface. Continue to plant out the strongest of the *Cauliflowers* kept through the winter. Those which have been brought on under hand-lights will be sufficiently advanced to be benefited by the application of liquid manure to keep them in a free-growing state, otherwise we may expect some of them to button. Take care that the slugs do not devour the Horn *Carrots;* strew over them sharp sand, ashes, new sawdust, &c., once or twice a-week. Sow a nice *Celery* bed for the latest crop. Raise it high, dig it deeply, and then spread on it 2 inches in depth of rotten manure. On this sow the seeds, previously soaked for three hours in tepid water, and cover them with finely-riddled stiff loam to a depth equal to the thickness of a halfcrown. Sow succession crops of *Peas* and *Beans;* the Marrows are in the estimation of many the best summer Peas, but the sorts must in a great measure depend on the taste of those for whom they are grown. Let all *Potato* planting be finished by the middle of the month. Another sowing of *Brussels Sprouts*, *Savoys*, *Scotch Kale*, and *Broccoli* may be put in about the middle of the month, likewise a succession of Horn *Carrots*, *Lettuces*, and *Radishes* as soon as the last-sown crop is above ground. Sow a little *Red Beet*, but not much, as the chances are that it will run to seed.

FRUIT GARDEN.

The disbudding of Peaches and Apricots must be commenced forthwith by removing all the foreright wood shoots, and a portion of those on the lower side of each shoot. Keep a sharp look-out for the aphis on the young shoots. After high winds fresh-planted trees in the open quarters should be finally looked over, and the earth pressed firmly around them. As the trees advance in age and acquire a full complement of wood and circumference according to the space allotted to them, it will be found necessary to pursue the system of disbudding with still greater severity, in order that the tree may be maintained in a healthy fruit-bearing condition, and not be weakened by crowding with too much wood. With this object in view, we must encourage only the young shoots nearest the base of the fruit-bearing shoot, but as the terminal shoot will be necessary for the proper maturation of the fruit, it must be closely stopped at the last thinning, and any attempt at growth afterwards must be carefully removed so as not to injure the leaves. The Strawberries break very slowly this spring. A rigorous winter is always a most serious meddler with the Strawberry beds. I have no doubt the impolicy of mowing or close-dressing Strawberries in the autumn will this spring be rendered apparent. Those who possess strong young plants of the Elton, by removing them now to a half-shady bank, perhaps on the north side of a garden wall on elevated ground, may with a little attention secure a good crop in August and September.

FLOWER GARDEN.

Commence in earnest with mowing, and cut down closely, grass will mow better all the season afterwards. Finish edging walks, clip Box edgings. Plant Gladioluses and Ferrarias. Plant evergreen shrubs if you are obliged, and if so, take care to preserve every fibre carefully. Have great balls of earth and holes dug much larger than the ball will fit into, attend well to watering, and fix the stakes to prevent the injurious effect of the plants being wind-waved. With Auriculas it will be necessary as the trusses rise to thin out the pips that are too crowded, selecting those where distinguishable which are malformed or injured. The plants will be benefited by an occasional application of liquid manure. Persevere in stirring the surface of beds after watering or heavy rains. Propagate Pansies for succession, and fill-up vacancies that occur in the beds, as the Pansy frequently dies-off before the grower is aware that it is diseased.

GREENHOUSE AND CONSERVATORY.

Specimen plants, whether for exhibition or not, should have very particular attention from this period forward. Those which have not had their final shift and require it should receive a liberal one, using much lumpy charcoal and coarse crocks in the bottom, taking care also that the drainage which covers the hole is hollow and well protected. Attend very frequently to trellis climbers, stopping, training, and arranging their shoots. Look well after Azaleas for next year's flowering; use heat liberally to bring their growth forward, and if any over-luxuriant shoots arise pinch them directly. In shifting drain thoroughly; use chiefly a sharp sandy peat, heath soil, and much charcoal of the size of peas. A few of the young shoots thinned out from the Pelargoniums should be put out for cuttings; these will flower in September and October. Follow up successions of Achimenes, and draw out, examine, or repot all resting roots, such as Begonias, Erythrinas, Oxalis, Lachenalias, &c. In the mixed greenhouse remove such plants as have passed their flowering season, pruning them back and returning them to the store pit. Large plants of Brugmansias that have been kept dry and resting through the winter should

now be pruned, shaken out, and repotted in readiness to be turned out of doors in a prepared sheltered situation, where they form beautiful objects late in summer and in the autumn months. Give such plants as young Boronias, Dracophyllums, Pimeleas, Polygalas, Dillwynias, Leschenaultias, Eriostemons, &c., a tolerably close corner of the house. Keep them clean, and repot them when necessary. Attend closely to stopping the young growth as it requires it, but as roots and branches act reciprocally, it is not a bad plan to allow delicate plants to ramble a little after they are first potted, to encourage the roots and have them well established.

STOVE.

The plants here are now in vigorous growth, and therefore they must be assisted by a lively bottom heat and a brisk growing temperature, with plenty of moisture and air, supplying weak liquid manure to such plants as require it. Clerodendrons should now be in vigorous growth—at least the first lot, and therefore must be assisted, and the younger stock of these plants must also be encouraged. Schubertia graveolens, Allamandas of all sorts, Gloriosas, Rondeletias, young Ixoras, Dipladenias, Francisceas, and many more free-growing plants must be encouraged by potting when necessary, and due attention to cleanliness. A fresh stock of Gesneras, Gloxinias, and Achimenes must be started. Apply the syringe with caution to all Orchids growing on blocks or baskets. Plunge in tepid water all such as require it, to secure proper moisture throughout the entire materials in which they are growing. Water well at the roots all strong-growing plants of Cycnoches, Mormodes, Galeandra, Chysis, &c. All Dendrobiums that want shifting must be attended to as soon as they are done flowering, and must be grown in very porous materials. When they have made 3 or 4 inches of new growth they commence forming new roots, and must then be liberally supplied with water both at top and bottom, and set in a warm part of the house.

PITS AND FRAMES.

Let all annuals or exotic seedlings be pricked out in good time, and watch them closely if in frames or pits for fear of injury by snails, &c. This is a good time to make a liberal sowing of the German Stocks, China Asters, Balsams, &c., and, in fact, annuals in general.—W. KEANE.

DOINGS OF THE LAST WEEK.

ANOTHER most brilliant week of bright sunny weather, which will be very beneficial in the cleaning and preparation of the soil, seed sowing, &c. The week's work has been to a great extent a repetition of that of the preceding week, as in sowing successions of Peas, Beans, Spinach, Radishes, and Turnips, pricking-off seedlings, watering Strawberry pots, potting-off and making cuttings, and proceeding with changes in groundwork, so as, if possible, to finish turfing before the end of March; therefore, instead of taking the several departments, we will make a few remarks on some things which have come prominently under our observation.

Peas.—We have some intended to be forward growing in the orchard house, where, for a short space in front, they will fruit on the ground without stakes, and the plants will be cleared off as soon as the pods become too old for parlour use. After the snow lately noticed, and the smoking with laurel leaves that we gave the house, the Peas looked very indifferently for a few days, the points hanging their heads, and being half inclined to wither. Various were the surmises as to the cause, most attributing it to some soot interfering with root action, but on examining the roots nothing could look more healthy and sound. We attribute the result partly to a frost before the snow came, but chiefly to the smoking with the roof so closed up with the snow. We mention this as a warning that such smoking, if dense and strong, should not be practised where there is young and very sensitive growth. Lots of Strawberry plants, Wallflowers, Roses, &c., were not in the least affected. In about the third day, all traces of any suffering in the case of the Peas had wholly disappeared.

Owing to the Peas just now referred to, we had partly made up our mind to do without a transplanted crop, but as those sown in the open ground did not grow so quickly as we wished, owing to the coldness of the soil, about sixteen days ago we sowed a lot on turves, and placed them on a mild hotbed. The turf pieces were about a foot long, 2 inches thick, and 3 inches wide. Some 2 inches of rotten rough leaf mould were placed on the surface of the bed, the turves with a little trench in the middle of each placed closely together on the leaf mould, the Peas sown thinly in the trench, covered half an inch over the turves with rich compost, and watered well with water at about 150°. The Peas very soon peeped through the turf and elongated fast, and after having had full exposure during the day for several days, and air at night, they were transferred to a well-aired and pulverised south border on the forenoon of the 25th, and never felt the moving. The roots were hanging out all round the turf, clinging to the rough leaf mould, and each turf was carefully deposited without breaking a root, with the nice warm soil of the surface beneath and around it; when the roots were well covered, we watered with warmed water, and the common earth was placed over the turf as the planting was finished. The staking was done as the work proceeded, and a few laurel twigs stuck in by the sides of the rows, so that all the border should be left open without a footmark to unnecessarily compress the soil. These details are essential to success. With this little trouble we shall be disappointed if we do not gather ten days earlier than from similar sorts sown in the open ground some time ago.

We must in candour state that these Peas thus forwarded under glass in a frame were red-leaded before sowing, and not a single Pea was touched by mouse or rat; but the same kind of Pea treated in the same way and placed in a rather open earth pit was considerably disturbed, the Peas being pulled out of the turves and some nibbled and eaten, though we are not sure whether mouse or rat was the transgressor. This is the first instance in our experience of red-leaded seeds having been meddled with, but having felt so indebted to the system as to praise it highly it is only fair that this one instance should be recorded.

It is very difficult to get rid of these mice depredators. It is not uncommon to pick up from six to a dozen flattened large mice in a morning, and still the number does not seem to decrease much. We do not like the idea of poisoning, nor yet of keeping the little things in torture for hours in traps. Hence our partiality for the old figure-4 trap, as with a slate at the bottom and a heavy tile hanging over it, it is either a miss or instant death.

Deep Planting and Deep Potting.—We have several times alluded to the impropriety of deep planting, even as respects hardy trees and shrubs. We examined some little forest trees lately that had died, and we traced the death to planting the young trees from 3 to 6 inches too deep. Inexperienced planters are almost sure to do so, the plants are so much more easily firmed. The collar of the plant—the point whence the stem goes one way and the roots another—should only be slightly covered; and if earth is added afterwards it should be given by degrees, only a little at a time. The same rule holds good as respects planting in beds or frames, or potting in general. We have lately seen a lot of fine plants that owed their premature decay to planting their soft succulent stems too deeply, as the heat and the damp soil together rotted the stems through. Even when matters do not go so far as this, many plants are greatly injured from being potted too deeply, and when inexperienced lads have to do such work they must be looked after, so as not to bury the stem of the plant. We have noticed such strong-growing plants as young Scarlet Geraniums fog or damp off merely from having been too deeply potted.

Ripened and Unripened Cuttings.—This is a matter which we have intended to allude to for some time, as the kind of cutting makes a great difference in the time of the young plants blooming—more than is generally imagined. This has prominently come under our observation for two or three years. Previously to that, from doing much bedding in the flower garden we had a larger space to go over in selecting cuttings, and could cull a good many more cuttings from near the top of the plant, where they received their due proportion of sun and air. Latterly, from the space being less, and the desire to keep the outlines of the beds as little broken as possible, and having no reserve ground for plants from which cuttings could be taken, we have been forced to go over our beds several times and to slip off small side shoots as near the base of the plants as possible, so that their removal should not be noticed. These little bits taken from the shaded parts of the plants strike and grow very well, but they will not bloom so early in the cutting boxes as those which were taken from nearer the tops of the plants. In previous years we could, if we had wished it, have had numbers of blooms of Geraniums from boxes where they were struck, say, from 1½ to 2 inches apart. The plants used to show bloom pretty freely after Christmas. For two or three years we have had scarcely any bloom. We could not find room to pot these

young plants separately, but even before we thinned out the plants in the boxes we had plenty of bloom for cut flowers, &c. In a large bank, on a stage, of these boxes of fine-looking plants, though small in the autumn, very few flowers have as yet shown themselves. We find that this habit of late flowering makes no difference as respects the free blooming in the beds in summer, but it does make a great difference as to obtaining bloom from small plants crowded in boxes before they are thinned out. To some of us a few handfuls a-week of such flowers would be invaluable.

Where beds are to be kept as long full and trim as possible, there should be a reserve garden for cut flowers, and obtaining cuttings for next year's supply. We know that many are forced to imitate our example, and content themselves with small shaded side shoots for cuttings. Would they kindly state if they have noticed such results as to the early blooming of these young plants? When we took cuttings from nearer the tops of the plants, and where, of course, they were more indurated by sun and air, we have had boxes of these young plants so full of bloom after the turn of the year that they might have at once been turned out in large pieces, or the box entire into ornamental vessels. For two or three years, from depending on the lower more shaded cuttings, we have been deprived of early bloom so as to cut from them for months before it was safe to turn them out of doors.

We have just had a fresh confirmation of this idea. We found that it would be desirable to have more plants of Madame Vaucher white Geranium, and having some old rather straggling plants, we cut them down, keeping the points by themselves, then those that could command a leaf, and those that could have 2 or 3 inches of bare stem. In a fortnight the first were well rooted and showing bloom buds, in sixteen days the second were rooted and breaking from every joint, and a few among them that had a growing point, but taken from near the base of the old plant, grew but showed no signs of flower buds. The third bare-stem lot have rooted and broken all over, but we shall not expect them to show bloom for six weeks. All have just been potted-off with good roots, many with excellent little balls in less than three weeks from the time of inserting the cuttings.

These cuttings were set on a mild hotbed, about 20 inches from the glass, and scarcely ever had any shading. We will tell exactly how these cuttings were treated. "Doubtless you had some of those new earthenware propagating boxes advertised in our pages?" Not at all. We admire them for their simplicity, and would wish our cottager friends had some to raise favourite seeds and cuttings. We desire still more that they would acquire the habit of using that which lies close to them: hence, though we admire pans, boxes, and pots of earthenware, on the score of economy we prefer shallow wooden boxes, and we hardly dare tell how little they cost when gone about in the way so as to cost less than the value of the wood. But for striking cuttings quickly, and where they will not stand long, nothing comes up to old iron spouting. Iron is fair, galvanised iron better, tin better still, but zinc is best of all. If the spouting is so worn as to have a number of holes all through it, all the better, not at all the worse, though with such shallow spouting drainage is a matter of little moment. Our pieces of spouting, generally a yard in length, were of tin or zinc, some 2 inches deep and 3 inches across. A pole, the diameter of two of these spouts put together, sawn across in pieces about 1 inch wide, and split in the middle, makes nice ends for the spouts, with room for extra water to escape. Well, in the bottom of these spouts a little rough noduled loam and charcoal was scattered, finer sandy loam above, and a little sand on the top, and the cuttings inserted about 1½ inch apart. Now, there are many simple modes of doing anything, but search the world through and you will find no really more successful propagating vessel than these old troughs. Of all metals zinc is the best. We believe there is a beneficial chemical action between the zinc, the soil, the water and the roots. Were it not for the first expense we would prefer zinc vessels for plants in pots to any other material. Many of our readers we know sigh after costly materials and expensive vessels, and then would they not do wonders! Very possibly they would, but we should have greater faith in their ultimate abundant success if we saw a better use made of the materials, simple though they be, that were close at their elbow and ready to be used. We like to see the highest style of gardening, with every requisite appliance. We also dearly love to see every makeshift made the most of.

For general matters allow us to commend especially the articles of Mr. Keane for several weeks past. It would be a pity even to try to spoil them by mere reiteration.—R. F.

TRADE CATALOGUES RECEIVED.

Kirk Allen, Brampton, Huntingdon.—*Catalogue of Geraniums, Calceolarias, Verbenas, Fuchsias, &c.*

Charles Turner, Royal Nurseries, Slough.—*General Spring Catalogue for* 1871.

TO CORRESPONDENTS.

*** We request that no one will write privately to any of the correspondents of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By doing so they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely to The Editors of the Journal of Horticulture, &c.*, 171, *Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

Prizes at the Royal Horticultural Society (*A Customer*).—Write to J. Richards, Esq., Royal Horticultural Society, South Kensington, and he will send you a prize list.

Bed of Sub-tropical Plants (*J. D.*).—We cannot undertake to plant beds, we can only criticise any planting that is proposed.

Lichens on Apple Trees (*C. J. S.*).—They indicate there is too much moisture about the trees. The soil should be drained, and the trees and their branches gradually thinned if too thick. This is the only preventive. Scraping off the lichens, and then brushing the stems and branches with a strong brine of common salt, is a temporary remedy.

Phalænopsis Schilleriana.—That exhibited by Mr. May, gardener at Melchet Court, at South Kensington on the 15th inst., which we stated had 80 flowers, had on when exhibited 286 fully expanded flowers and 12 not expanded.

Irish Shamrock (*I. W. B.*).—The specimen you enclosed is the Wood Sorrel, and we incline to the opinion that it is the true Shamrock; but it is disputed. The name *Seamar-ogh* applies to any three-leafleted plant. If you refer to the "Border Magazine," i. 148, published at Edinburgh in September, 1863, you will see a collection of evidence in favour of the opinion that the Wood Sorrel is the Shamrock.

Potato Apples (*A Constant Reader*).—All Potato berries if covered with earth change their colour, and acquire more or less that of a tuber. That one you had, and the plants from it, are merely the produce of the berry's seeds.

Coniferæ from Seeds.—"I have sown for the last three or four years a few pans of Thuja orientalis, and put them into the frame, and have reared numbers with the greatest ease, which also bear transplanting, and grow in any soil as well as the commonest weed. A neighbour has raised Cedars in the same way, the seeds of which seem not so prolific, though we each picked our own seeds. My success has led me to seek Thujopsis and other seeds, but in vain. Can 'A. B. C.' help me?—Vicar."

Tea Roses having Blind Shoots (*E. C.*).—Tea Roses having blind shoots should have all laterals well shortened back to two or three eyes, all weak shoots entirely removed, and have a liberal top-dressing, if in large pots, or be repotted into rich soil if the pots are small. Malt dust, bones, and horse droppings form a good top-dressing if mixed with leaf soil. Myosotis dissitiflora is the earliest of the Forget-me-nots for spring blooming. The young shoots are apt to come pink at first, especially if the soil is too light or sandy. A little well-decayed manure will help to invigorate the plants.

Peach Pruning (*Slay Neb*).—The best system of pruning Peach trees is that of the Rev. T. C. Bréhaut, as given in his work, "The Modern Peach Pruner." It may be had by post from our office for 3*s.* 8*d.* It treats of long and close pruning. The long-pruning system is only available where large spaces are to be covered; and for small spaces, low walls, and trellises, the short system is best, and is generally most suitable for an amateur.

Worsted on Gooseberry Trees (*Idem*).—The black worsted to scare birds is easily placed on the bushes; all that is necessary is to take it from branch to branch, crossing it so as to form apparent meshes about 2 inches wide. The birds are more effectually scared by it than by anything we know.

Stopping Pelargoniums for June Exhibition (*Shooters Hill*).—The plants should have their final stopping at once, or not later than the first week of April.

Bed of Verbenas (*M. S. B.*).—We would stir the ground between the plants lightly, and then give a top-dressing of light rich soil. The worst of these plants surviving the winter is that they grow weakly, and their flowers are small and of short duration. You will see by bedding-out time whether they are likely to do any good. If they thrive well, mulch with equal parts of well-decayed manure and loam, and water freely in dry weather.

Geranium Leaves (*Inquirer*).—The leaves sent appear to have been punctured by some insect, but what we are unable to say. It is very common this year, and we think it mainly arises from a cold moist atmosphere, and too rich and wet soil. Afford more warmth and admit an abundance of air, watering carefully.

Roses Frosted (*G. F., Suffolk*).—The Roses cut down by the frost to the mulching, we would prune to the live parts, and those that are only mottled prune in the usual way.

Ants in a Cucumber House (*G. S. H.*).—They are very troublesome and injurious. Syringe them and their haunts with a solution of Clarke's compound, 3 ozs. to the gallon, or you may poison them by feeding them for a few days on honey, and then mixing arsenic with the honey in equal proportions.

Bignonia jasminoides not Flowering (*A Subscriber*).—We can only attribute the non-flowering to the plants not being trained sufficiently near the glass, or to want of air and light. You do not state any particulars, and therefore we cannot advise.

Evergreen Shrubs for a Lawn (*M. G.*).—There are few flowering evergreen shrubs suitable for a lawn—Arbutus Unedo and its variety rubra, Berberis Darwinii, Double Furze, and Laurustinus. Grown for their foliage, the following are beautiful:—Aralia Sieboldii, Tree Box, Portugal Laurel, Ilex Hodginsi, I. maderensis, I. altaclarensis, I. Aquifolium pendula, and gold and silver variegated varieties, Sweet Bay, and Yucca recurva. There are Conifers, but you only ask us to name flowering evergreens, and we know of nothing finer than those named, except Rhododendrons and Kalmia latifolia, with Andromeda floribunda, which require peat soil. For planting them, the present is the next best time to the end of September or beginning of October.

Evergreens for Beds in winter (*Idem*).—Aucubas of sorts all very fine, Green and Variegated Box, Common and Portugal Laurel, Green and Variegated Hollies, Laurustinus in warm situations, Skimmia japonica, common Yew, Taxus elegantissima, Thujopsis borealis, Thuja aurea, Juniperus Sabina variegata, and Cupressus Lawsoniana. They should be procured early in autumn, and be placed in pots sufficiently large to hold the roots without cramping; plunge them in the beds deeply enough to cover the pots. In spring remove them, and plunge them in an open situation, watering during dry weather in summer. Any irregularities should be regulated in spring before the growth commences.

Peach Tree's Defective Growth (*Idem*).—The tree will no doubt recover this year if freely syringed in dry weather, and abundantly watered in hot, dry periods. If you were to mulch it with short manure it would be an advantage. Disbudding and stopping will need to be attended to, and do not allow it to bear more than one fruit to every square foot of wall covered.

Citrus japonica Treatment (*A Subscriber*).—This, the Otaheite Orange, ought now to be repotted, if necessary, in a compost of light turfy loam, with one-fourth of decayed manure, and a free admixture of sand. Good drainage is requisite. If you could give the plants a moderate temperature, say 50° to 55° at night, with a moist atmosphere for a few weeks after potting, all the better. It is not necessary to remove the fruit now ripe; it will fall off, but it may be done. Let the small oval-shaped green fruit remain; they will ripen in due time. Now is its season of flowering, and probably the plant will flower shortly. They make young wood along with the blossom. Do not overwater, but be moderate in that respect, not giving any until the soil becomes dry, then enough to show itself at the drainage, and it ought to be given before the plants suffer from the want of it. The time to bud Orange trees is in summer as soon as the growths are made, usually in June and July.

Geranium Leaves Spotted (*A Monthly Reader*).—The leaves sent are spotted or blistered, partly from want of air, and partly from being kept too cold and wet. Afford a temperature of 45° to 50° at night, and admit air freely, not watering so long as the soil remains moist. They will improve with finer weather. We think the soil rather too rich. The "black" on the Myrtles is probably scale. It may be destroyed by syringing with 3 ozs. of soft soap, and about ten drops of turpentine to the gallon, using the mixture at a temperature of 140°, laying the plants on their sides and turning them round, so as to wet every part. The "black" may be removed from the leaves with a sponge and the soap solution. Oranges and Lemons from seed bear fruit, but not generally until they are of considerable age. They are best grafted or inarched. We do not know of a dark-leaved plant more suitable for a shady north ribbon border than Perilla. The Pelargonium leaves sent have been attacked by green aphis; fumigate the house with tobacco.

Sulphuring Vines (*St. Brigid*).—The best time to apply sulphur to the stems of Vines is when they are at rest. It is not advisable to peel the loose bark too much at any time. It ought not to be done now, so as to make a single incision in the wood. At this period we would use no tobacco liquid, but make a wash, or rather thin paint, say a pound of sulphur and 3 ozs. of soft soap, dissolving the soap, and making the sulphur into a stiff paste. If you do not like the colour, add a little clay, and apply the paint to every bit of the wood, but not warmer than from 70° to 80°.

Vine in Greenhouse (*Young Amateur*).—We do not think the Black Prince Vine in the barrel beneath the greenhouse stage will do much good unless you make a border and plant it out. If you cannot make a border inside, though we would do so if convenient, you may be able to have one outside, and introduce the Vine through an aperture in the wall. If you cannot have a border we would move the barrel from beneath the stage, and place it where the Vine can be watered, &c. A good compost for Vines is four parts of the top 3 inches of a pasture where the soil is a good light loam, one part old lime rubbish, one part stable manure, half a part half-inch bones, half a part lump charcoal, and half a part calcined oyster shells, the whole well mixed. It answers well either for a border, for pots or tubs, and for top-dressing. We advise you to top-dress the Vine at once, and to see that the drainage is good.

Peat (*Idem*).—That used by gardeners is from high ground, brown and fibrous, and full of particles of white sand. It is generally covered with heath or ling. That from low ground is termed by gardeners "bog soil." It is to be avoided for all potting purposes, and we fear that the remainder of the stack of bog soil will not be of any use for compost, though it would be useful for beds of Rhododendrons, Azaleas, and other American plants.

Fruit Trees for Small Garden (*Ignoramus*).—We would have pyramids or bushes if your garden is exposed, and we would plant them in borders along the sides of the walks at about 6 feet apart, and 2 feet 6 inches from the walk edging. *Apples* on the Paradise stock—*Kitchen:* Lord Suffield, Cox's Pomona, Dumelow's Seedling, Gooseberry Apple. *Dessert:* Early Harvest, Cox's Orange Pippin, Pitmaston Nonpareil. *Pears* on the Quince stock: Bon Chrètian, Beurré Bachelier, Beurré Hardy, Beurré d'Amanlis, Beurré Diel, Bergamotte Esperen, Comte de Lamy, Alexandre Lambré, and Marie Louise. *Plums:* Oullin's Golden, Prince Englebert, Belgian Purple, July Green Gage, Victoria, Early Rivers, Orleans, Kirke's, and Jefferson. Loam is of three kinds—viz., 1, strong; 2, sandy loam; and 3, loamy sands. Strong loam contains about 50 per cent. of clay, and not less than 30, lime 5, and the same of humus or vegetable matter, or 5 per cent. of each, and the remainder sand and other matters. Sandy loam, contains 20 and not more than 30 per cent. of clay, and not more of lime or humus than 5 per cent., the remainder sand and other matters. Loamy sands contain 10 per cent. and not more than 20 per cent. of clay, and not more than 5 per cent. of lime or humus, the remainder sand and other matters. Loam, as a term employed by the gardener, means all soils not peat, bog, sand, or clay.

Mandevilla suaveolens and Cobæa scandens (*Idem*).—The pots or pans containing the seeds we suppose are in a hotbed; continue them there until the seedlings show the rough leaf, then pot them off singly in 3-inch pots in a compost of light fibrous loam two parts, one part leaf soil, and one part sandy loam, with a free admixture of silver sand. Return them to the hotbed, shading them for a few days until established, and after hardening them off remove them to the greenhouse, and grow them in a light, airy position, shifting them into pots a size larger as soon as those they are in become filled with roots. You are no doubt aware that they are climbers, therefore train them near the glass.

Alocasia metallica (*J. R. B.*).—The Alocasia metallica should have less water in winter, but not be allowed to become quite dry. We do not quite understand the questions about the hothouse, but it would be a great advantage to have a bed with bottom heat in one part, and an open stage in the other.

Tricolor Geraniums (*H. G.*).—Write to J. Richards, Esq., Assistant Secretary, Royal Horticultural Society, South Kensington, and tell him the information you need about exhibiting. The price a florist would give depends entirely on the novelty and excellence of the variety.

Scale on Pear Tree (*A. G.*).—It is the worst case of scale that has come to our notice. The insect is closely allied to the Coccus, and is the Pear-tree Oyster Scale (Aspidiotus ostreæformis). Those on the shoots enclosed to us are dead, but we would, nevertheless, dress every part of the tree with paraffin oil, taking care that it does not touch the swelling buds.

Constructing a Cold Pit (*A Constant Reader*).—Double walls are of great value for their non-conducting properties. The cavity should be not less than 2 inches, and need not exceed 3 inches. It is not necessary to tie them together except at the base to the extent of two or three courses, and the same at the top. The base and top should be built solid, so as to make the cavity air-tight. It is well to bed the foundation in asphalt; boiling coal tar poured on dry sifted coal ashes answers well; it answers nearly as well to bed the base for a few courses in cement. We like the pits sunk in the ground, not having more than 2½ feet of the back wall above ground. We have them 3 feet deep in front, and 5 feet deep at back, they being sunk 2½ feet. The best material for the floor is cement and fine gravel brought to the consistency of mortar, and then run on a bed of concrete, formed of stones and lime rubbish rammed firm. The cement should be run level, and smoothed over so as to form a level even surface. The best wood for the lights is sound, well-seasoned, red deal. Pitch pine, however, is most excellent, more durable, and, of course, more expensive. For pit lights we do not consider large squares desirable, as they are more liable to breakage than in a fixed roof; squares of 15 inches are quite wide enough, and they may be double that in length. They should be glazed lengthwise—that is, the sash-bars 15 inches apart, or nearly so. The lap should not exceed a quarter of an inch, nor be less than one-eighth of an inch. No putty to be placed in the laps. 21-oz. 3rds quality sheet is most suitable for pits and frames. 15-oz. is too light.

Camellias after Flowering (*A Lady in Cheshire*).—After flowering it is well to place them in a house with a temperature of from 50° to 55° at night, and maintain a moist atmosphere. They will do admirably in a vinery not started until the beginning of March; but in an early vinery, say one started in February or January, the temperature is too high. Ours are shooting strongly in the greenhouse, and we shall not move them until we start a late vinery, removing them to a cooler position as soon as the buds show.

Hedychium Treatment (*A E. H. C.*).—The stalks that flowered last year are of no further use, but we should leave them until they turn yellow; then cut them away closely. The new shoots from the base are those required for future flowering. You may let the seed remain until it is ripe. Two parts rich turfy loam, one part leaf soil, old cow dung, or well-decomposed manure, with one part sandy peat, and a free admixture of sand will grow it well. It requires an abundant supply of water when growing and flowering, but at other times requires to be kept dry, but not suffering the leaves to flag.

Intermediate Stock Sowing (*Rathmines*).—If sown now in gentle heat, forwarded, and planted out in May, it will flower in autumn. It may be sown out of doors in an open situation in July, the seedlings pricked off about 3 inches apart, when large enough to handle, in good rich soil, taking up the plants in autumn, potting singly in small pots, and wintering in a cold frame, affording abundance of air, with the protection of mats in severe weather. When they are growing freely shift them into larger pots, and continue to do so as soon as the roots show at the sides, and until the flowers appear. They are fine either for greenhouse or flower-garden decoration early in summer.

Insects in Decaying Cow Dung (*H. V.*).—The yellow grubs are the larvæ of one of the species of two-winged flies belonging to the extensive genus Anthomyia, very similar to the common house fly. There was also a smaller grub or larva of one of the midges of the genus Sciara, or Molobrus. The long thin ones are a species of worm (Vibrio), and there was a small white spring-tailed insect (Podura) in the box. None of these are materially injurious to vegetables, living ordinarily in decaying vegetable matter.—I. O. W.

Names of Plants (*W. S. Lee*).—A leaf of Salvia argentea. (*J. H. B.*).—Danæa racemosa, more commonly known as Ruscus racemosus. (*J. B.*).—Your Alternanthera amœna is quite correct. Certainly it will bear bedding-out; it is quite an acquisition for small beds, and in what is known as "carpet bedding." (*G. S.*).—1, Pulmonaria angustifolia; 2, Saxifraga crassifolia; 3, Pellæa hastata; 4, Pteris longifolia; 5, Aspidium falcatum; 6, Adiantum æthiopicum. (*W.*).—Euonymus europæus, common Dogwood. (*L. A.*).—The flower you found in the wood is Erythronium Dens-canis, Dog's-tooth Violet. It must have come from some

garden, being a native of Italy and Hungary. (*Edward J. Ensor*).—Your shrub is the Cornelian Cherry, Cornus mascula. (*L. B. A. H.*).—Libonia floribunda. (*J. L.*).—Zygopetalum Mackayi. (*C B. G.*).—Your plant is the Bog Aphodel, Narthecium ossifragum, a plant very closely allied to the Rushes. (*J. B.*).—The Ribbon Grass is Phalaris arundinacea variegata. The flower is that of Scopolia carniolica. (*B. H. W., Bitterne*).—Triteleia uniflora.

POULTRY, BEE, AND PIGEON CHRONICLE.

THE LANCASHIRE MOONEY—BREEDING FOR POINTS.

The Journal of a few weeks ago contained a letter from Dr. James More upon the Lancashire Mooney fowl, which incidentally raises a question of very great interest, complaining as he does of the judges giving the preference to Spangled cocks, which are produced by the crossing of two distinct breeds, the true-bred Lancashire bird being inadmissible in the show pen on account of his stained deaf ear and darker tail.

With regard to the disgust experienced by amateurs who may purchase prize birds and find afterwards that they are useless for pullet-breeding, I have myself had occasion to observe this result; and it may serve to point a piece of advice I have often given to those newly smitten with our fascinating hobby—viz., to acquire some sound knowledge of the matter before spending very much money upon it. The contrary course is too often followed, and frequently leads speedily to general disgust with the fancy itself. The tyro takes the complaint rather badly, and forthwith rushes in to buy the best pen of whatever breed has tickled his imagination, with the probable result of bitter disappointment when he comes to breed from them; for all breeders know well that far more depends upon the judicious mating of birds than on their intrinsic excellence, and better results will be obtained by very mediocre stock mated with judgment than are likely to be bred by the best birds in the kingdom paired by chance. This is a fruitful cause of suspicion quite undeserved. I have known a man buy a noted breeder's "best pen," and feel aggrieved because the vendor beat him in the chicken classes at next year's show, averring that he "could not have sold first-class birds;" the simple truth being, that the judgment of the skilled breeder had enabled him to produce better stock with what was left than the other could hatch from the very pick of his yard.

Success in the fancy is not obtained in this way. The breed fancied must be carefully studied, and it will be well to study it as far as can be some time before any purchase is made. Nearly all fanciers are pleased to give valuable information for the asking, and it is of no use being shy in asking it. There is about many a truly fraternal spirit which makes it a pleasure even to ask a favour, and no real amateur need have much fear of a rebuff. Some will devote much time and trouble to helping even total strangers, and there is positively no excuse for anyone beginning the pursuit in the total ignorance of all its essentials, which many do. By thus learning something about a breed in the first place, by securing the aid of some friend in the selection, by beginning in a modest way till more experience is gained, and, most of all, by careful reflection, observation, and study of the birds when obtained, more or less success will always be secured, where the rash, or what may be called the "any price" system, will only end in disappointment and failure.

But to return to the Spangled Hamburghs. The facts mentioned by Dr. More are fully stated in every standard poultry book, and no amateur need therefore be without the necessary information. I think that the system as actually carried out was a most foolish one, but it will be interesting to recall its origin. Years ago the true-bred and hen-tailed Mooney was exhibited, and won the prizes, as the hens frequently do still from the richness of their marking; and the change evidently arose from some genius who had noted its defects in the tail and deaf ear, exhibiting as a "spec" the product of a Pheasant cross. Now it is only needful to put side by side a Mooney cock and one of these show birds to see at once why the cross hit instanter. Not only the tail and the deaf ear, but the breast, and the fine, high-bred-looking head of the new bird, are infinitely superior; and it was almost a matter of course that the judges should give it the preference, as the two breeds are too alike in general characters to show any glaring sign of a cross, which could alone prevent the handsomest bird from winning. Others soon discovered the secret, and finally the Mooney cocks stood no chance, and were virtually discarded.

I have stated through other channels that I thought the ingenious expedient a clumsy one after all, and that the proper course would have been to perfect the Mooney by patience and care. By this time it might have been done, but that the effect of the actual system pursued has been all bad I cannot admit. Much uncertainty still remains, but some approach to a composite breed combining the excellencies of both and breeding true has by degrees been made; and I know that Mr. Beldon, for instance, has now a strain which very often produces both cockerels and pullets fit for exhibition. Sooner or later this is always the case; and so far as a "neatly chiselled head" is superior to a coarse one, &c., I do think that while time has been wasted over it which might have been saved by better procedure, something has still been gained.

As regards the judges, they have simply given prizes to birds whose heads, tails, &c., manifestly presented a higher type or standard of beauty with no glaring evidence of a cross. Can it be maintained that they should have done otherwise? I do not think it can. Some disappointment is caused to those who rush into breeding the birds without first learning how to do it, but the result is a better type of bird, which in a very few years will breed pure, and I cannot think this result an undesirable one.

It is in this way many breeds have been perfected and raised. That Dorkings owe very much to Cochins and Brahmas is well known. Both size and stamina were improved by the cross; and so long as the product showed no evidence of it I think the judges were right in giving prizes to the largest-framed birds, though well knowing at that early time that much of the size was then owing to the large eastern breeds. The gain has now been perpetuated, and all sign of the cross is long lost. An evidently cross-bred bird of course ought not to win, but this does not really touch the matter in hand.

It always seems to me important to remember that there is no such thing as finality in poultry-breeding. Taste improves, and breeds improve with it; and it is a most singular fact that judges have only to show their preference for any point, however rare, and the skill of the experienced breeder speedily produces it. He may perhaps use a cross at starting—often he does and often not; but he obtains the point somehow, and if it is a desirable point the breed is so far raised in value. Cochins lately have been bred with decidedly fuller breasts, and this is unquestionably an advantage. I should certainly regret that any breed should ever become so fixed in character as to leave no room for such modifying process; and I have therefore taken occasion by Dr. More's interesting letter for a few remarks on a process which is little understood by many amateurs, but which in one breed or another is constantly going on in the poultry world.—L. Wright.

HANDLING FOWLS AT POULTRY SHOWS.

"R. D.," at page 149, raises the pertinent question of handling poultry at shows.

We hold an annual poultry show at Shepherdswell, and, as one of the committee, I volunteered last year to pen the birds as they arrived at the show; but one worthy who was entrusted with a valuable pen of Game fowls, particularly wished to pen his employer's birds, remarking, "It was not everyone who knew how to handle a bird," or something to that effect. Of course I very respectfully consented, thinking that by watching his manipulation of the birds I might possibly "gain a wrinkle," and so the performance commenced by the expert thrusting his hand into the hamper, and drawing out the cock bird by one leg, and the bird, as soon as clear of the hamper, commenced a series of gyrations, forcibly suggesting to my imagination a fractured limb instead of a first prize. However, after describing sundry eccentric circles, the bird was safely penned; but I thought if that was the proper way to handle a bird I had much to learn, and thinking that perhaps such manipulation, to be successful, required a good deal of practice, I for the time gave up the idea of becoming proficient in it, and fell back upon my old-fashioned method.

I think in taking birds from a hamper, the better plan is to span the birds well with both hands by the shoulders or centre of the body, keeping the wings closely folded; this effectually prevents the birds from struggling, and consequently injuring themselves or their plumage. In the case of removing them from pens this plan will be found rather more difficult, as the size of the opening in the pens is generally too small to admit both arms comfortably, but with care I think it might be practised; the bird should always be held in such a manner that the head may

be in the direction in which it is being moved. Nature has intended the head always to go first, and in this case I do not think it polite to oppose Nature; at all events, the plumage is much less likely to suffer displacement by pursuing this method. In the case of Brahmas and Cochins, the primary feathers are very apt to get temporarily displaced by handling; these should always be adjusted as soon as the birds are placed in the pen.

As a rule, I think the less a bird is handled by the legs the better; Ducks certainly never should be. It is a common practice to carry Ducks by the head; but I think the persons who do so should be performed upon in the same manner. In the case of exhibition birds weighing 8 or 9 lbs. each, it is evidently cruel; a firm hold of the wings at the shoulders with one hand, and the abdomen supported with the other, is much more humane.

In conclusion, I think it is due to exhibitors that the committees of poultry shows should appoint a responsible and practical person to pen the birds as they arrive, and also to pack them after the show, in which case I believe we should hear less of damage done to plumage, which is certainly very annoying, and in some cases unwarrantable.—W. J.

PROTECTING EXHIBITED POULTRY.

After the number of outrages and accidents to poultry, Pigeons, and Rabbits in transit, it is high time that some means of prevention should be devised. Should things go on as at present, the exhibition interest will be seriously injured. Such occurrences are not only very expensive but extremely aggravating. As a means of reducing their number, I would suggest that exhibitors should provide themselves with baskets made either of small-meshed wire netting or wickerwork let into a morticed hardwood frame, with a door at the top fastened by a lock and key. The exhibitor should provide himself with two keys to the lock. Two or three days previous to the show he should forward one of his keys by post to the secretary—they can be sent for a penny stamp—by tying them on a cloth label, on the back of which should be written the sender's name, the class, and number. The secretary would on the arrival of the cases go round and unlock them, leaving the key in, and after the exhibition was over and the specimens returned to their respective packages, then lock them up and force the key through a small hole in the case provided for that purpose; by so doing no one could interfere with the stock. Of course when arrived home the exhibitor would unlock the case with his other key, and the second one can then be secured. The extra trouble to the secretaries of having keys, and the locking and unlocking business, will be much better and time-saving than the string nuisance, which is very insecure and tedious work, especially if there are only two hours to catch the next train after the close of the exhibition. I shall have a case intended for Rabbits at the Stroud Show, and anyone on application to the Secretary can see it.

I cannot help giving the Stroud Committee great credit for their schedule of the forthcoming show. The prizes for Rabbits, though not so large as at Colchester, are well arranged and give every variety a chance. Rabbit fanciers one and all should enrol themselves members of the United Kingdom Rabbit Club, head office, Collargate, York. By its influence we may expect to see a great reaction in this class of domestic pets.—David P. Gooding, *Colchester*.

In reply to Mr. Toukin's letter in your last number, allow me to suggest the use of letter-padlocks for locking exhibition hampers. They require no key, and can be obtained through any ironmonger at a trifling cost. The password to unlock them could be sent by post to the secretary of a show. This would in a great measure prevent the mutilation of birds in transit to and from an exhibition; and if each member of a committee would undertake the personal supervision of a given number of pens during the time the show was open to the public, and leave a person of well-known respectability in charge during the night, I cannot see how any damage could arise to the birds, providing competent persons penned and unpenned them.

If the padlocks above mentioned would not answer, why not have the lids of the hampers secured with wire instead of string? I sent a cockerel to the Northampton Show, and it came back with every feather in its tail broken. I was at the Show on the first day, and when I left the feathers were perfect. I wrote to the Secretary about it, but he assures me it was not done at the Show. The lid of the hamper was only slightly tied down; and when my man reached the station to bring it away a number of porters were round the hamper with the lid half opened, and no doubt they helped to do some of the damage. —An Exhibitor.

MALAYS—CUPS—PACKAGES.

During the year 1870 Malays were not deemed worthy by most committees of a separate class; however, it is gratifying to find in this age of improvement, that in the year 1871 they are sometimes allowed to compete in the form of a "Sweepstakes." Northampton kindly set the example; Stroud purposes, I believe, doing likewise. I trust that every important show will henceforth allow Malays to figure in the prize-list; it is far preferable to competing with "Silkies" in the Variety class.

If committees could possibly arrange that their shows should not terminate so late in the week as Friday, I believe the entries would be far more numerous. For instance, the late Woodbridge Show closed on the Friday night—my Malays arrived home on the following Tuesday morning. Being ravenous, they had devoured most of the ticket enclosed in the hamper, announcing the fact that they had won the first prize. I have not yet been able to pay the carriage, as the waybill has been lost—no wonder, after being so long on their journey; perhaps they ate that also.

If silver cups were abolished, and the money prizes in each class made larger, would it not be a step in the right direction? When a silver cup is, as is often the case, offered for the best pen in the Polish, French fowl, and Variety class, you may generally notice that it is awarded to the Polish. Again, when there is no separate class for either Polish or French fowls, and they have to compete in the Variety class, the Polish are mostly victorious. I often wonder that there are not more exhibitors of Polands, on the strength of it.

Allow me also to suggest that a secure way of sending valuable fowls to a show, is to have the lid of the hamper fastened with a puzzle padlock, having letters round it, which can only be unfastened by knowing the word fixed upon, and which could be communicated by letter to the secretary. — A. G. Brooke, *Rectory, Shrawardine, Salop*.

EGG-EATING HENS.

I should recommend "G. T.," or anyone else who is troubled with hens eating their eggs, to break an egg and dust the contents nicely with fine Cayenne pepper, afterwards turning the egg round so as to get the pepper below the yolk if possible, and leave the egg in the offender's nest. Or, if he catches her in the act of eating an egg, let him drive her away quietly and place pepper in the remainder of the egg, endeavouring, as stated above, to get the pepper underneath. He will very soon see her running furiously about with distended beak. If one dose is not sufficient, administer another a little stronger; but I think once will be enough, for I saw the remedy tried, and it turned out to be—A Perfect Cure.

P.S.—Does "G. T." throw his old shells back to the hens when he has eaten the eggs? That is the best way of learning hens the bad habit.

THE POULTRY JUDGING AT WOODBRIDGE.

I wish to avail myself of your columns to ask the name of the judge, who at the recent Exhibition at Woodbridge has rendered himself conspicuous by reversing the decisions of many of the tried and acknowledged judges in poultry matters? How is it it has not appeared in any of the reports, or in the catalogue, as is customary, and indeed necessary to the due responsibility of the judge and the satisfaction of the exhibitor? In my own case I should think this gentleman's vision must have deceived him, or else my birds must have been put in some dark corner, as I sent two pens of Buff Cochins such as should have caught the eye of any Cochin judge, as they have never failed to arrest attention before in the best company in England. Indeed, one pen, containing the Manchester first-prize cock and a large beautiful lemon-coloured hen, has taken first prizes at Wolverhampton, Northampton, Portsmouth, and numerous other leading exhibitions, yet here it was never noticed; and the birds in the other pen were winners of first and second prizes. In my Dark Brahma pen I showed the first-prize Birmingham pullet, which also took the first prize and cup at Wolverhampton, with a splendid Black-breasted cock which has never been shown before without gaining a first or second prize. This pen does appear to have drawn the attention of this excellent judge, as he gave it a high commendation. Now, as a test of this gentleman's judgment, I am prepared to show my Buff Cochins and Dark Brahmas against any fancier in the kingdom for £50, to be judged by two judges of the highest standing, say three pens of Cochins

and three pens of Dark Brahmas, each pen to consist of a cock and one or two hens, the birds to be *bonâ-fide* the property of the competitor, and any trimming to be a disqualification.—James Watts.

[The names of the Judges were published with our report of the Show last week. We have had various complaints on other subjects connected with this Show.—Eds.]

GAME FOWLS.

I most fully coincide with the opinion of "Cornish Duckwing," as every really good judge of Game fowls must thoroughly despise "the fashionable half-bred Malay exhibition type," with their long bodies and their drooping whip tails. They are the most spiritless Game fowls ever bred.

I think that Manchester and Wolverhampton have quite as good birds as Nantwich, though not so many in proportion to the relative sizes of the towns.—Newmarket.

OUTRAGES ON PRIZE BIRDS.

We sent two pens of Game Bantams to Colchester Show, and besides arriving too late for competition, after twenty-seven hours' travelling, they were returned to us in a state which unfits them for exhibition for at least six months. The two cocks had somehow got to each other and fought to such an extent that one bird had lost almost all his head feathers, and a great many from his neck; the greater part of his bars and much of his tail were damaged, to say nothing of being blinded in one eye. The other bird was damaged, but not to so great an extent. They certainly were sent in the same hamper, but with a formidable partition between them, which would have defied the attempts of the strongest Malay to break through; but having carefully examined the basket we can find not only not a single feather in either division, but not the least drop of blood can be found on the canvas, and had these birds fought in the basket, the amount of blood they must have lost would have left a trace not easily to be overlooked. We have written to Mr. Laver, the Secretary of the Colchester Show, on the subject, and he satisfies us that there were no birds which had sustained the least injury to be seen in the whole Show. We come, therefore, to this conclusion, that some evil-disposed person must have put them together for a combat during some period after the birds had left the care of the Exhibition Committee, or that, very likely, the porters at the station, where the basket was detained during the night of their return, must have thought fit to relieve the tediousness of their night-watches by a "cock fight." Be the mode of injury what it may, it seems very curious that so many birds should have been maltreated after this particular Show; it would lead one to suppose that a party of scoundrels had waylaid a great many birds for the purpose of doing them some injury. If this maltreatment continue we shall merely keep our birds at home, for we prefer looking at them in good feather.—Bellingham & Gill, *Lancashire*.

A Cochin cock belonging to me at the Whitehaven Show had his neck hackles on one side broken off with the nail. The bird had taken the second prize. I also exhibited two Cochin hens, which also took a second prize; one of these was spoilt by having some of the feathers of both wings cut. I sent one of these hens afterwards to Carlisle; she had a perfect comb when she went, this was spoilt by having the centre of the comb cut out. Now all this malicious injury must have been done in the show rooms, and by persons skilled in such work.—Mary Wilkin, *Bootle, Carnforth, Cumberland*.

A PIGEON-CARRYING CASE.

Graham *versus* London and North-Western Railway Company.

Mr. Frank Graham, 13, Market Place South, Birkenhead, was the plaintiff in this action, and the defendants were the London and North-Western Railway Company. Mr. Anderson appeared for the plaintiff, and Mr. Preston for the defendants. The claim was for £6 8*s*. 4*d*., compensation for loss sustained by the plaintiff, owing, it was alleged, to delay on the part of the servants of the defendants in delivering two baskets containing Pigeons, entrusted to them for delivery at Sydenham. The claim was £2 15*s*., fees paid for entry, 10*s*. 4*d*. for carriage paid to defendants, and £3 3*s*. for a cup which the Pigeons would certainly have won had they been forwarded in time. Mr. Anderson said that he was somewhat dubious about being able to maintain his claim to the last item. The Judge remarked that Mr. Anderson's would be a very convenient way of winning the blue ribbon of the turf—to bring forward, after the race was run, a horse, and say it would have been quite sure to win if only it had arrived in time. Plaintiff failed in proving the non-delivery, and consented to a nonsuit.

Mr. Graham says, "I should certainly have gained the day had the Secretaries of the Show answered my letters and sent me particulars as to the time of receiving the Pigeons, so that I might obtain a witness to prove the non-delivery. The only information I could obtain was through the kindness of the Judge, Jones Percivall, Esq., who rendered me every assistance in his power. The conduct of the Secretaries is so strange that I, as well as my solicitor, Mr. Anderson, now think the birds must have arrived in time, and through some negligence were not penned. Perhaps the Secretaries will state the reason in your columns."

THE UNITED KINGDOM RABBIT CLUB.

This Club, I am happy to say, is now a reality, which will, I am sure, be hailed by all interested in the rearing and exhibition of fancy Rabbits as a powerful help to their being placed in that position to which their worth entitles them. I am glad that so much interest has been manifested in the formation of the Club, and that we have had so many expressions of opinion from those whose experience both of Rabbits and exhibitions entitles their opinions to respect. One result is certain—viz., that the committees of the various shows and this Club will be able to work together for mutual advantage; and if committees will study their own interests, the Club will tend to the furtherance of those interests, and also carry out the intention of placing Rabbits in a better position amongst their neighbours for competition.

It is very important that a competent judge should be provided for each show, and that the Rabbits alone should be his work, and not that a judge's almost exhausted energies should be entirely spent upon them after bestowing the strength and vigour of the early day upon other parts of the show. Can we wonder that at times such unsatisfactory results follow? After several hours of nice and careful examination of feathers, it may be a judge is not generally much in the mood to turn his attention to fur and award the prizes. I think one object of the Club should be the selection of judges whose knowledge of the various points of Rabbits, from long experience as breeders and exhibitors, is unquestionable; also that a code of rules as to the points to be adopted should be drawn up for the guidance of such judges, so that some uniformity may be found in their decisions. A register should be kept of the names and addresses of the members, the Rabbits in stock when such return is made, the number of entries, and the prizes received at the shows. This register might contain the rules, and any other information of importance to fanciers, and be sold at a reasonable price to each member to protect the Club from loss by its publication. There are many, I doubt not, who are neither breeders nor exhibitors, yet would be glad to become honorary members, and I see no reason for refusal. The subscription is small enough, yet I am glad to learn a great proportion of the members, so far, have not thought the 2*s*. 6*d*. a sum commensurate with the expenses incurred in the formation of the Club, and so have placed the Treasurer in a more comfortable position.

I am glad so much information has been spread through the pages of "our Journal;" and the affair is taken up by the best men for the purpose, who have gone into the affair *con amore*. I know the Secretary will have had much to do, and will yet have to do more, in order that success may be secured, therefore I suggest to all correspondents the advantage of their enclosing a stamped and addressed envelope for a reply when such is needed.

The register alluded to, I think, might be brought out in July next; but that is a matter for the Committee to determine.—Charles Rayson, *Ivy Lodge, Didsbury, near Manchester*.

Birmingham Cattle and Poultry Show.—The annual meeting of the Council to revise the prize list is fixed for April 6th, previous to which suggestions as to any alterations deemed advisable, and any offers of special prizes, may be sent to Mr. John B. Lythall, Secretary.

NOTES FROM MY CANARY ROOM.—No. 3.

Bear in mind these notes are not intended to apply specially to any one of the numerous classes into which Canaries are divided, but must be understood as being general in their application. Further, readers will please consider them as a friendly hand-in-hand chat as we go along, not entering into too much detail, as at no distant day the Canary will be presented in a way which will exhaust the subject.

The best Canaries you can put in your cage are a pair of Norwich birds, a yellow cock and a buff hen, or *vice versâ*. I will not here enter into any explanation of the reason why it is best to do this, or indulge in any "Diversions in Breeding." This and other matters will be fully treated upon by-and-by in another form. My hints are for those who never put up a pair of birds before. If you wish to breed clear birds pair them as I have just now said; if you wish for marked birds, let either the cock or the hen be marked; and if you desire to breed crested birds, pair a crested cock and a plain-headed hen, and *vice versâ*. Clear birds will produce clear crests, and dark markings on either side will produce a fair proportion of variegated crested young ones in every nest—*i.e.*, if the cock be clear or grey-crested pair him with a marked hen, and if dark-crested put him to a clear hen.

One cannot remember everything, and last week I was so hurried that I forgot to say that if your breeding cage consists

of two or more compartments they should be connected by a moveable partition, or a circular hole which can be closed at will by a door suspended in front. This arrangement will admit of your running one cock with two hens. Keep him with the first till she goes to nest and lays at least her first egg, when you can pass him through to the other. By the time No. 2 has built and laid her eggs the first hen will be about chipping. But there will be time enough to talk about this next week, by which time I daresay some will have eggs. Till then feed on a mixture of Canary, summer rape, linseed, and a little hempseed, giving a teaspoonful of chopped hard-boiled egg and bread crumbs every morning. Supply such green food as may be in season—chickweed, groundsel, watercress, or lettuce.—W. A. Blakston.

THE BUSTARD.

Our friend "Wiltshire Rector" has given us some account of the capture of the specimen belonging to the Rev. G. T. Marsh. Possibly some account of the recent captures may interest some of your readers.

As the story is told in our little Wiltshire town, three of these birds were seen on Salisbury Plain, also by a boy, who was "bird-tending." He, seeing such large game, loaded his old gun with a marble, and made a random shot at the trio at some 130 or 140 yards distance, wounding one of the smaller birds, which he captured. This bird is at the present time in our little town, being set up by our local bird-stuffer, King by name, and by nature in his art, having few equals. The specimen is not much damaged, and a little time since formed one of our local "lions," if it be possible that a bird can ever make a quadruped.

The remaining pair of birds were descried by a gentleman in the neighbourhood of the Plain with a telescope, and a party made to capture them. Fortunately for bird No. 3, the pair came within gunshot of the only single barrel of the party, and one thus escaped; the other paid the penalty to the single barrel.—Y. B. A. Z., *Warminster*.

A JUST REMONSTRANCE BY THE WIFE OF A CANARY FANCIER.

Mr. Editor,

Sir, | There has been such a stir | and such a commotion | with this new-fangled notion, | that I really don't know | what on earth I shall do. | Birds are all very well | to rear or to sell | in a moderate way, | but these mad schemes don't pay. | I've talked till I'm hoarse, | and just made matters worse; | so at last I decided | if in you I confided | (for of course you're A.1), | the thing might be done. | You're not to take what I say | *cum grano salis:* Nay, nay! | 'Tis true every whit, | I'm not romancing a bit. | If I want a new dress, | and my wishes confess, | it's "Haven't you heard? | I've bought such a grand bird; | a magnificent crest | and ——;" you guess the rest. | If I venture to say | "It's such a fine day, | we might go for a walk." | "My dear, how you talk! | I've John Young to see; | and if I'm not there to tea, | or at least before school, | I shan't see his clean Mule." | He did once say "Yes," | and I ran off to dress, | thinking, "What a rare treat | to stroll down the High Street! | I'll perhaps get a bonnet | with a nice feather on it." | But when I walked down | in my very best gown, | he said, (wasn't it mean?) | "Now we'll go to the Dene; | the birds want some fresh moss." | I declare I felt cross. | If I go soon to bed | to recruit a sick head, | my lord's sure to come | with some new "wonder" home; | and he tears up the stair | with a rush of cold air. | "Bessie, are you asleep? | Do just take a peep! | I'm sure you ne'er saw | such a beauty before!" | And if ever I choose | in the morning to snooze, | if I'm not first turned out | I'm aroused with a shout | in the voice of a Stentor, | or some gruff old precentor, | "Percy, run to the station," | (you'd think the whole nation | was rising, but no). | "Now come, don't dawdle so, | or the birds will be dead, | for they'll want to be fed!" | If he stays in the house | I must sit like a mouse, | for "the Judge" wants to write | or a letter indite. | And if I dare speak, | the long silence to break, | "I've got an idea, | just keep quiet and hear." | Or if I turn weary | of a stillness so dreary, | and run off for a while, | 't would make Melpomene smile | to see him rush to the stairs. | "Ma, are there two f's in affairs?" | or, what's still more absurd, | "Bessie, what's that French word? | I wish you'd stay here; | you know I want you, my dear." | And then, oh! the washings, | the soapings and splashings, | the ransacking of drawers, | against all wifely laws, | and (which he sees no sin in), | the waste of good linen; | because, "You know, dear, | birds require so much care; | a bit of cambric's not much, | and it's soft to the touch." | He raves about "feather," | and pros and cons whether | he'll mate Buff with Buff, | and all sorts of stuff. | Then there's making of cages, | and such comic rages | because "Jack" borrows his tools, | or runs off with his rules; | or his nails are all done, | or his chalk line is gone; | or his wood is too wet, | or his saw isn't set; | or his chisel's no edge, | or his plane wants a wedge. | And such buying of brushes, | and such frantic rushes | after whitewash and blue | as you never knew. | Then think of his outings, | his judgings and routings. | He never feels dull; | his head's far too full | of all kinds of things | both without and with wings. | If his nose *is* pure Grecian | and his profile patrician, | he need'nt have all | life's pleasures at call. | Now without any joking, | isn't all this provoking? | Don't you pity the wife | that leads such a strange life? | I'm always expected | to go out unprotected, | and never to frown | when he "runs up" to town. | But when he next turns his feet | to the house in Fleet Street, | if you'll just say a word | (for I know *you'll* be heard), | to improve my hard case, | in my prayers you'll find place; | and I shall evermore be | yours most grateful—B. B.

VENTILATION OF HIVES DURING WINTER.

In compliance with the request of "R. S.," in page 191, regarding the ventilation of hives during winter, I may say that in practice it much resembles that which our leading horticulturists impress so much on amateurs and young gardeners in the heating and ventilating of their greenhouses and vineries. They must study the weather, and in a great measure be able to foretell what is likely to occur during the next twelve hours; thus they are able to apportion with certainty the proper amount of heat or ventilation: so also must we study the weather, and so must we regulate our hives.

As it is a description of my mode of ventilation that "R. S." requests, and not the advantages derived from it, I will confine myself principally to describing the former. In the first place, therefore (and I hope he will, if I am wrong, pardon the suggestion), I may review the case described by "R. S.," by cutting small holes in the block of wood sufficient to prevent the egress of bees, and opening a hole in the top only an inch in diameter. In the case of a straw or even a wooden hive with a solid crown it is possible that this supposed ventilation might actually have been closed with comb and propolis, and so instead of a draught being the means of killing the bees—as, when we take into consideration the case of a hive being turned topsy-turvy, and remaining all night with the thermometer within one degree of zero without receiving any harm, I am almost certain could not have been the case—it must, in my opinion, have been a case of suffocation. The partial closing of the doorway, leaving only the small holes in the block of wood, was, if I am correct, the very worst policy to pursue. With the hole in the top possibly closed (and if not, the milk pan and extra covering were sufficient to prevent proper ventilation), the bees would naturally come to the doorway, and in their endeavours to get out would entirely close the entrance, and raise a general commotion. Next would occur clusters of dead bees, and thus the whole would become a total wreck.

The great secret with regard to bees during snow, is to entirely close the entrance, and ventilate at the top or back of the hive, or both combined. I have my hives made with the doorway running nearly the whole width of the hive; this is regulated by a slide, either to shut quite close or give a doorway nearly the whole width. If I have any suspicions that the doorway admits the least ray of light I cover it with a piece of cloth; then I ventilate according to the state of the weather and number of bees. The ventilators are placed at the back of the hive, about 1½ inch from the top, and are either sliding or revolving, similar to the ventilators in kitchen ranges or those used underneath the floors of buildings; they are holes bored in the hive between every comb, and opposite these are holes bored in a thin piece of wood covered with perforated zinc, which may be either the whole width or less as required. The revolving ones have one screw nail in the centre to turn upon, and the sliding ones have two or three with small mortices cut out to allow them to travel. Should I consider this too little ventilation, my crown-board being all bar and slide, with the feeding place in the centre, the latter being at all times covered with perforated zinc, I have only to remove what stops the hole. If this is not enough I run in one or more slides of perforated zinc in place

of the wooden ones, and remove the covering. The wooden slides ought to be removed in the autumn, and the top covered with some woollen material. The bees thus closed in make no attempt at getting out at the door—they naturally draw themselves to the ventilators, and as the heated air ascends it keeps the bees near them quite comfortable and quiet. A little practice with the sound of the bees gives one a very good idea what amount of ventilation is required.

These ventilators in the back of the hive are not for winter only; I use them to a great extent in summer, when they are, in my opinion, a great preventive of foul brood, and add greatly to the weight of supers, doing away also to a great extent with the necessity for nadirs, and preventing clustering outside. Whenever the weather is suitable during the honey season and the hive becoming crowded, the super is put on; the doorway is then extended the whole width, and the ventilator is drawn —this keeps the stock hive cool. The super or supers are well wrapped up and kept warm, so that comb-building goes on uninterruptedly and with but very few bees, whilst the stream of bees at work is far greater than when the stock hive is overheated. Such contrivances and the study of the nature of the bee, together with plenty of white clover and bean blossom, are the means whereby we get so fine and so many supers, notwithstanding the calumnious, nay, false accusations made by your esteemed correspondent, Mr. Pettigrew. I may add that the whole of my hives are kept in a bee-house, which is as well ventilated as the hives themselves, besides being insect-proof.—A Lanarkshire Bee-keeper.

THE LARGEST APIARY IN THE UNITED STATES.

Captain J. E. Hetherington is stated by the American "Bee-keepers' Journal" to control, perhaps, the largest apiary in the United States. Purchasing his first swarm at the age of eleven years, with 5 dols. earned for the purpose, he so increased it by purchase and natural swarming that the spring of 1859 found him with sixty-four stocks, from which in the succeeding autumn he sent to market 3500 lbs. of fine box-honey besides nearly doubling his stock. When the civil war broke out he left to the management of others three hundred swarms of his winged favourites, and entered the service as a private in the first regiment U.S. sharp-shooters, in which he served till 1864, when he received his discharge on account of disability, arising from having been thrice wounded, and retired with the rank of Captain. We have said that he has the largest apiary in the United States, and do not think it can be denied. In the autumn of 1868 he had nine hundred hives, and his present number is seven hundred. This honey is all sent to market in beautifully made boxes, never containing more than four pounds each. Many thousands of these boxes find their way annually to the metropolis from his apiaries in Cherry Valley in New York, and always command the best prices.

MR. PETTIGREW'S BALANCE SHEET FOR 1870.

My garden is on the immediate south of the black, but not mean city of Manchester. Our position is too near the city for honey-gathering. Hence we send most of our hives of bees four or five miles into the country, where they are placed in cottage and market gardens during the spring and summer months. Any out-of-the-way or rubbishy corners of such gardens answer well as a stand or home for bees. We gladly pay rent for a small space in such places; and our items of expense for rent and carriage are always heavy, and astonish those whose bees are never removed from their own gardens.

The present year, like 1868 and 1869, has not been favourable for honey-gathering. Owing to the long-continued drought and easterly winds, honey was but scantily secreted in and yielded by flowers. Easterly winds seemed to prevent or stanch back the secretion of honey which is so abundantly found in the nectars of flowers when the wind is warm from south or west. The month of July, which is usually the best of the season, was this year quite a failure, as hives lost weight then, instead of gaining it, in this part of England.

In 1868 our income from bees was £32; expenses, £5; profit, £27. In 1869 our income was £43; expenses, £13; profit, £30. This year our income is £70; expenses, £20; profit £50. Of course, the income is derived from the sale of honey, honeycomb, wax, and hives. Our honey is sold at 1*s.* per lb., honeycomb at 1*s.* 3*d.* and 1*s.* 6*d.* per lb., hives in autumn are sold at their honey value. Our expenses this year were swelled up by these items:—carriage, £5; rent, £5; empty new hives and boards, £9; feeding, £1; total, £20.

But how many hives do you keep? Last autumn we had forty-two, which were valued at an average of 23*s.* per hive, which is 7*s.* a-piece less than really good hives are worth. Owing to the protracted winter and cold spring months five of the weakest hives died, and six or seven more were so reduced and weakened that they never swarmed at all. Nine swarms became fugitives and were lost from want of time on our part to look after and hive them. One hive of bees and lots of little presents of honey and honeycomb were given to friends.

The number of hives kept as our stock this autumn is forty-five, which are in fine condition, averaging 6*s.* a-piece better than those of last year. If 1871 be a good honey year they will enable us to present a more favourable balance sheet next time. We value them at 28*s.* each. We use no wooden boxes of any kind as domiciles for bees, considering them objectionable from almost every point of view. Expensive hives, too, are out of the question, as they consume and waste money and serve no good end to the purchaser. We use nothing but well-made straw hives of large dimensions, which we think answer and look better than any other kind of hive. Our bees are the common sort—the true honey bee—*Apis mellifica*, which can never be surpassed for industry and real work. Only think of a working man having 2,000,000 of servants working for him, and not one lazy creature among them, save a few drones which are produced at certain seasons for important purposes! We think highly and wish to speak well of our insect servants, for they require but little attention and cost comparatively little for food. What lessons of industry, economy, cleanliness, sociality, contentment, and loyalty are taught by them! Whoever introduces to the notice of working men anything more profitable or more easily managed than a few swarms of bees will be hailed as a benefactor.—A. Pettigrew, *Rusholme, Manchester.*

HERMAPHRODITE BEES.

I enclose a specimen of a drone which has the peculiarity of possessing part of the worker and part of the drone. You will see that one of the hind legs or tibiæ is formed like that of a drone, while the other is like a worker, although not quite perfect. The antennæ and proboscis are slightly different, while the eyes are like those of a worker. I shall be glad if anyone can explain this aberration which I have often seen. I have, however, only once met with the black bees spoken of by Huber, it occurred in an Italian hive last summer, and a great many were expelled in one day. I collected a number and stored them in a box for examination, but several earwigs got in and devoured them, although they left untouched a number of workers placed beside them. They appeared to be part queen and part worker, possessing the legs and abdomen of the queen, while other parts resembled the worker, the sting being slightly curved. Bees here are far advanced for the season, and for the past two weeks drones have been flying about. On the morning of Wednesday the 15th inst. the thermometer in a sheltered position stood at 80°, consequently much damage has been done owing to the advanced state of things. Raspberries are completely destroyed, also the most forward Gooseberries, and it is to be feared other fruit blossoms, although not so forward, will fail to set their fruit.—A Lanarkshire Bee-keeper.

[We have submitted the bees which accompanied your letter to Mr. F. Smith, the distinguished hymenopterist, who says:—"I have examined the two honey bees—one is pure male; I detect nothing of the other sex in it. The other is as follows:—size of worker bee, antennæ and eyes worker. Left anterior leg male, right intermediate and posterior leg both male. The left posterior leg is true worker, having the first joint of the tarsus covered within with rows of stiff hairs. The abdomen has the silky gloss of a male, but is the same size as that of a worker; at the same time it is of the blunt form of the male at the tip."]

OUR LETTER BOX.

Spanish Hen's Crop (*J. S.*).—The crop is only the receptacle for the food, whence it passes into the stomach, where it is digested. We cannot pretend to give you the reasons that guided the creation of a fowl, but the crop is a convenient and necessary appendage to an animal without teeth. Your Spanish hen is probably crop-bound. If she is you must pour hot water down her throat until you can feel her crop full, and ascertain whether the lump in the crop softens; if it do not, you must open the crop and take it out. It is not difficult. Pick off some feathers in front, and cut it open with a very sharp knife, remove the undigested mass carefully, sew up the crop with coarse thread, and rub the suture thoroughly with grease. You must sew the crop first, and then the skin, be careful not to sew the two together. Oatmeal alone is better food than it is if mixed with peas or maize. As you have lost five, your fowls are either poisoned, or there is something very unwholesome lying about. Spanish chickens require no particular food except stimulants at times, and the best of these is beer. The hens should be with the cock a fortnight.

Cochins' Comb Drooping (*James*).—The complaint you make is a common one, in many cases it results from over-feeding; thus, you may take a bird with a comb hard and erect as though cut out of a sheet of metal; put him up to fatten, and as the process goes on you will see it first become flaccid, then lop, and then fall over entirely. Much has been said and written about supplying them with bone dust, and thereby affording the material for greater strength; but we believe it is only

necessary to choose birds that have unmistakeably erect combs for breeders, and to discard all others, in order to banish faulty ones from a yard. You may find the greatest encouragement and inducement to try, in the fact that formerly all the Spanish had falling combs, but as soon as such were discarded by the judges they disappeared, and are now never seen.

Flavour of Eggs (*A. C.*).—You do not state the breed of the fowls; some eggs are unquestionably richer than others. Spanish have always been considered the best, having the largest proportion of yolk. Cochins are often so full of flavour that they are called strong. Crêve-Cœur and Houdan eggs are both good. Hamburghs are sometimes thought poor. Weather affects eggs; they are thought to have more flavour in mild and hot, than in chilly weather. We have no doubt that a liberal supply of grass, in the shape of large sods[cut with plenty of earth and given daily, will improve the eggs. Your food is good.

Fattening Hens (*Idem*).—We think a hen too old to fatten after six months. When a hen has done laying she wants to sit, unless she is of a non-sitting breed. If you are bent on fattening your hens, the best plan is to do so in the winter. They will want keeping to make them tolerably tender, and you will only be able to do it in cold weather. We have no doubt the mixture will keep eggs, but we have always found salt communicated its flavour to the eggs. We keep them in plain wetted lime. It is slaked, so as to admit of its being poured over the eggs, and of its hardening in a few hours.

Duckwing and Black Red Game Fowls together (*R. P.*).—The best way to introduce Duckwing blood into your yard, is to turn down one hen. The cross then is so small you can easily get rid of it at any time, whereas, if you put a cock, the strain may run through the whole yard. Duckwings, if true-feathered, are great favourites on account of their beauty, and generally distinguished in the prize sheet, but they are not always preferred to the Black or Brown Reds.

White Dorkings' Eggs (*J. H. C.*).—You should buy some eggs of the prizetakers at the large shows.

Early Dorking Chickens (*A Monthly Reader*).—The reason of the failing of your Dorkings is that you do not keep supplying your yard with pullets. We have at the present time Dorkings with chickens eight weeks old. Hens will not sit early, pullets will, but only for the first season. They are hens afterwards. Chickens hatched now should lay in October, and be broody in January, such will sit well. The only advantage in Brahmas will be, they lay at an earlier age. We know no better mother than a Dorking. These have been much mistaken as to the climate necessary for them. They are hardy, but will not bear confinement. We have seen as good birds bred in Lancashire and Scotland, as in Surrey and Sussex. The outer skins cannot be removed without injury to the bird. You should not breed from him.

Brahma Cock (*Clericus*).—If he continues "hullying" the hens, buy some others, pullets preferably. If he is not more courteous to them, you had better sell him, though he has taken two first prizes. Buckwheat is sown in April. If you refer to page 187, you will see notes on its culture.

Cost of a Poultry Show (*T. M.*).—Our correspondent wishes for a balance-sheet of the receipts and expenditure in connection with holding a show; being desirous to know whether there are any shows which are self-supporting, if not, how the deficiency is made up, and what is the most popular amount of entry fee; also the cost of fitting-up, advertising, management, and prize money, the fee given to judges, &c.

Shanghae Eggs (*H.*).—Shanghae is synonymous with Cochin-China. If you refer to our advertising columns you will see many vendors to whom you can apply.

Small Egg (*A. Knowles*).—Such miscarriages are very common. We have seen eggs not much bigger than a pea.

Hen Cock (*W. J. W.*).—It is not uncommon for a hen to acquire the plumage of a cock, and even to crow. Such a bird is worthless, we have seen more than one. It was formerly said,

> "A whistling woman and a crowing hen,
> Foretell evil to the men."

Poultry-keeping in a Limited Space (*A. D.*).—You have not had the Hamburgh long enough to say whether or no it will prove a good layer. Although laying when you bought it, the change of home, food, and habits would account for its ceasing to do so. We think Brahmas, Cochins, or Crêve-Cœurs would suit you, or Spanish. Perhaps the last two will be best, as they do not sit, and broody hens are nuisances in small spaces.

Silver-pencilled Hamburgh Chickens—Chitteprats (*Chitteprat*).—The chickens hatch out darker, and moult lighter and more correctly as to markings as they grow older. The Pencilled Hamburgh was and is known in many parts of the north as a Chitteprat.

Various (*G. M.*).—You may keep twenty-four hens and two cocks without trouble in your run 63 feet by 15 feet, with one quarter of an acre of grass. By painstaking you might increase the number, but it is in every way better to be understocked than overstocked. In such a space as you name the dust need not be under cover. At this time of year, during the cutting easterly winds, it is better that the chickens should be sheltered for three or four days, but in fine sunshiny weather they should be put out after a few hours. Change the food by substituting meal for whole corn, and sometimes maize instead of barley. Scraps of any kind are also good.

Sore on Cock's Comb (*R. W.*).—The hens in all probability first made the sore by picking the comb. Separate him from any others, and rub the sore with citron ointment. When houses are kept clean no powders are required. We have never tried that you mention. Most of them affect the nostrils and eyes of the birds.

Woodbridge Poultry Show.—"Please note the following printer's errors in the catalogue. R. F. Nalder, Croydon, first prize Jacobins; J. W. Collinson, first prize for Antwerps.—C. Drake, *Hon. Sec.*" "My attention has been called to the remarks of your reporter on pen 82 (Golden-pencilled Hamburghs). The birds alluded to have been exhibited six times, and have been awarded the undermentioned prizes—2nd at Southampton, 1st and cup at Ipswich, 1st at Lowestoft, 2nd at Oakham, 2nd at Colchester, and highly commended at Portsmouth.—The Owner of Pen 82."

Aylesbury Ducks (*J. W. S.*).—We believe the early eggs will belong to the old drake.

Bee Hives (*A Subscriber*).—Write to the dealers in hives who advertise in our columns and tell them what you need. Write to them all.

Bees Dead in the Comb (*W. Steward*).—The bit of comb sent was old, but we could detect no evidence of disease, and can therefore only surmise that in those cases wherein the bees have died, leaving a store of honey, the hives were either insufficiently protected from cold and wet, or that their inhabitants dwindled away owing to the deaths of their queens during winter. Where no honey was left the inference would, of course, be that the bees perished from starvation.

METEOROLOGICAL OBSERVATIONS,

Camden, Square, London.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude 111 feet.

Date. 1871. March.	9 A.M. Barometer at 32° and Sea Level.	9 A.M. Hygrometer. Dry.	9 A.M. Hygrometer. Wet.	9 A.M. Direction of Wind.	9 A.M. Temp. of Soil at 1 ft.	In the Day. Shade Temperature. Max.	In the Day. Shade Temperature. Min.	In the Day. Radiation Temperature. In sun.	In the Day. Radiation Temperature. On grass	Rain.
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
We. 22	30.116	44.2	42.1	E.	41.6	55.2	31 8	86.6	28.8	—
Th. 23	31.006	47.1	5.8	E.	42.0	65.5	34.4	94 8	32.8	—
Fri. 24	29.840	51.5	47.5	E.	42.6	68.4	38 2	100.1	33.2	—
Sat. 25	29.859	52.0	47 9	S.W.	43.8	66 6	39.2	107.6	34.3	0.040
Sun.26	29.952	55.1	49.6	S.E.	44.2	68.7	43.5	110.0	40.0	0.038
Mo. 27	30.059	47.0	45.0	N.	44.8	51.2	45.5	87.1	41.4	—
Tu. 28	30.386	40.3	35.1	N.E.	44.8	46.6	30.3	96.0	27.8	—
Means	30.031	48.2	44.7		43.4	60.3	37.5	97.7	34.0	0.078

REMARKS.

22nd.—Fine spring-like day, but misty in the evening.
23rd.—Fine morning, rather dull about noon, but very fine afternoon and evening.
24th.—Cloudless nearly all day, and extremely hot for the time of year.
25th.—Very fine warm day, cooler in the evening, rain after midnight.
26th.—Rather dull morning, fine afternoon, rain during the night.
27th.—Much cooler, though fine.
28th.—Very cold all day, though fine and occasionally sunny, and very bright at night.

The period from 23rd to 26th inclusive one of extreme warmth. Higher temperatures have been recorded, but I do not know of an instance of four consecutive days in March with maxima exceeding 65°.—G. J. Symons.

COVENT GARDEN MARKET.—March 29.

A steady demand, with the supply about equal to it, has enabled the dealers to obtain the same rates during this week as in the previous one. Winter fruits, however, now begin to assume a very perishing character, and considerable quantities of ordinary Apples are offered at very low rates. Dessert Pears are nearly over. The Potato trade is heavy, and large arrivals are to hand. Importations of French salading and Asparagus are tolerably regular.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples ½ sieve	1	6	to 3	0	Mulberries lb.	0	0	to 0	0
Apricots doz.	0	0	0	0	Nectarines doz.	0	0	0	0
Cherries lb.	0	0	0	0	Oranges ₱ 100	6	0	10	0
Chestnuts bushel	10	0	18	0	Peaches doz.	0	0	0	0
Currants ½ sieve	0	0	0	0	Pears, kitchen doz.	2	0	6	0
Black do.	0	0	0	0	dessert doz.	3	0	8	0
Figs doz.	0	0	0	0	Pine Apples lb.	6	0	10	0
Filberts lb.	0	0	2	0	Plums ½ sieve	0	0	0	0
Cobs lb.	2	0	2	6	Quinces doz.	0	0	0	0
Gooseberries quart	0	0	0	0	Raspberries lb.	0	0	0	0
Grapes, Hothouse lb.	10	0	20	0	Strawberries oz.	2	0	3	0
Lemons ₱ 100	6	0	10	0	Walnuts bushel	10	0	16	0
Melons each	0	0	0	0	do. ₱ 100	1	0	2	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes doz.	4	0	to 6	0	Leeks bunch	0	4	to 0	6
Asparagus ₱ 100	7	0	10	0	Lettuce doz.	1	0	2	0
Beans, Kidney ₱ 100	2	0	3	0	Mushrooms pottle	1	0	2	6
Broad bushel	0	0	0	0	Mustard & Cress punnet	0	2	0	0
Beet, Red doz.	2	0	3	0	Onions bushel	5	0	8	0
Broccoli bundle	0	9	1	6	pickling quart	0	0	0	0
Brussels Sprouts ½ sieve	3	0	4	0	Parsley sieve	3	0	6	0
Cabbage doz.	1	0	3	0	Parsnips doz.	0	9	1	0
Capsicums ₱ 100	0	0	0	0	Peas quart	0	0	0	0
Carrots bunch	0	4	0	8	Potatoes bushel	2	0	4	0
Cauliflower doz.	2	0	5	0	Kidney do.	3	0	4	0
Celery bundle	1	6	2	0	Radishes doz. bunches	0	6	1	0
Coleworts doz. bunches	3	0	6	0	Rhubarb bundle	0	9	1	6
Cucumbers each	0	6	1	6	Savoys doz.	1	6	2	0
pickling doz.	0	0	0	0	Sea-kale basket	2	0	3	0
Endive doz.	2	0	0	0	Shallots lb.	0	6	0	0
Fennel bunch	0	3	0	0	Spinach bushel	3	0	5	0
Garlic lb.	0	8	0	0	Tomatoes doz.	0	0	0	0
Herbs bunch	0	3	0	0	Turnips bunch	0	6	0	9
Horseradish bundle	3	0	5	0	Vegetable Marrows doz.	0	0	0	0

POULTRY MARKET.—March 29.

We have a very small supply of young poultry, and are not without indications of scarcity. Not only has it been an unfavourable winter for breeding, but the absence of a regular supply from abroad has caused a diminution of our usual stock. Prices are high.

	s.	d.	s.	d.		s.	d.	s.	d.
Large Fowls	4	0	to 4	8	Pigeons	0	9	to 0	10
Smaller ditto	3	6	4	0	Rabbits	1	5	1	6
Chickens	3	0	3	6	Wild ditto	0	9	0	10
Ducklings	6	0	6	6	Hares	0	0	0	0
Goslings	8	0	9	0	Guinea Fowl	3	0	3	6
Pheasants	0	0	0	0	Grouse	0	0	0	0

WEEKLY CALENDAR.

Day of Month	Day of Week	APRIL 6—12, 1871.	Average Temperature near London. Day.	Night.	Mean.	Rain in 43 years. Days.	Sun Rises. m. h.	Sun Sets. m. h.	Moon Rises. m. h.	Moon Sets. m. h.	Moon's Age. Days.	Clock before Sun. m. s.	Day of Year.
6	Th	Meeting of Linnean Society, 8 P.M.	57.0	36.9	47.2	14	27 af 5	40 af 6	59 af 7	37 af 6	16	2 31	96
7	F	Good Friday.	57.7	36.8	47.3	21	24 5	41 6	25 9	4 7	17	2 13	97
8	S		56.1	35.8	46.0	23	22 5	43 6	50 10	36 7	18	1 56	98
9	Sun	Easter Sunday.	55.0	35.3	45.2	22	20 5	44 6	morn.	17 8	19	1 39	99
10	M		55.9	33.5	44.7	16	18 5	45 6	12 0	9 9	20	1 22	100
11	Tu		56.0	35.2	45.6	20	15 5	46 6	24 1	14 10	21	1 6	101
12	W	Royal Botanic Society's Spring Show.	55.8	36.4	46.1	27	13 5	48 6	23 2	24 11	☾	0 50	102

From observations taken near London during forty-three years, the average day temperature of the week is 56.2°, and its night temperature 35.7°. The greatest heat was 79°, on the 7th, 1859; and the lowest cold 20°, on the 10th, 1860. The greatest fall of rain was 0.73 inch.

THE CULTIVATION OF THE GRAPE VINE.

OF late years much has been written about Vines and Vine-culture; more able writers and more experienced cultivators than I can pretend to be, have recorded their matured experience in these pages, and it seems needless to go over the same ground, if the numerous questions which are contained in the "Answers to Correspondents" did not show that information is still required on this subject.

As a wall fruit in favourable seasons and positions, the Grape is well worthy of cultivation out of doors in the south of England. My experience with this method of culture is rather limited, but it does not seem that many varieties ought to be grown in this way. The Black Hamburgh and even the Muscat of Alexandria have ripened out of doors when the season has been unusually favourable, but under such circumstances the well-known variety Royal Muscadine, when placed in competition with them, has generally been placed first for flavour; it is the variety usually grown in this neighbourhood trained to the walls of cottages, and sometimes carries immense crops of fruit.

It is not my intention to enter into all the details of Vine-culture, but merely to make a few suggestive remarks.

In the first place, as regards varieties, there are so many now in cultivation, and few growers require more than at the most half a dozen, that it is a matter of much anxiety to know what sorts to plant. It is best to plant the largest proportion of black Grapes, and there is none so generally useful as the Black Hamburgh. This variety succeeds in positions and under circumstances where many highly-lauded sorts would be comparative failures, and there is no other Grape, black or white, which would so well of itself keep up a supply all the year round.

Royal Ascot, sent out a few years ago, I would place in a higher position than is sometimes accorded it, and I am inclined to believe that this sort will yet be grown to a large extent when it is better known, being robust in growth and free-bearing, the berries setting as freely as those of the Hamburgh, of the most intense black, covered with a dense bloom, having a flavour to which no one can take exception, and ripening in a cool house as early as the Hamburgh.

Alicante requires rather more heat to ripen it well; it does not hang in good condition so long as Lady Downe's, but when in season is much to be preferred to that variety. It was exhibited in good order at South Kensington on March 1st, and gained the first prize against very excellent examples of that variety.

Lady Downe's is the variety generally grown along with Black Hamburgh, but to do it justice it requires rather more heat than the Hamburgh. It keeps better than any other sort of Grape; I have had it ripened in August, and kept it in pretty good condition until June. To keep well, the fruit must be thoroughly ripened; it ought to be ripe by the first week of September. A high night temperature is not required in all the stages of its growth; from 60° to 65° is a good temperature until the first flowers are observed to expand, when it should be increased to 70° by night, with a proportionate rise by day, say 15° more from sun heat. An atmosphere either too moist or too dry is to be avoided; I generally allow the evaporating troughs to become dry, merely sprinkling the paths and syringing all the wall surface twice a-day. Under such treatment nearly all the varieties of Grapes set well, and in the case of shy-setting sorts the bunches should be gently shaken twice a-day—at 9 A.M. and 1 P.M., which will facilitate the process. After the flowering period a lower temperature is advisable. Another peculiarity of the Lady Downe's is the liability of the berries to scalding. The time when most danger is to be feared from this is after stoning, and immediately before the Grapes show signs of colouring; a rather dry atmosphere, with abundant ventilation in the day, will entirely prevent it. As the Lady Downe's Grape is generally required to keep late in the spring, the berries should be well-thinned out, for if they are too close the bunches will not keep well. It is injurious to the Vines to allow the Grapes to hang till spring. I generally cut all the bunches in January, removing as much young wood as will allow the end of it to be inserted in a bottle of water; if they are hung up in a frost-proof room, and the bottles filled with water as often as it is required—about once or twice a-week—the bunches draw up a large quantity of water. A few pieces of charcoal should be kept in the water to prevent its becoming offensive. Under such circumstances the fruit will keep sound, and the stalk fresh, until May. I have had the bunches in tolerably good condition in the middle of June, five months after they were cut from the Vine.

The Alicante is a very desirable variety. It is a magnificent Grape, requiring a rather higher temperature than that recommended for Lady Downe's; it keeps in good condition until March, and is large in bunch and berry; its colour is the most intense black, and the berries are covered with a dense bloom. If you ask for the Alicante in the nursery it is just as likely as not that the Morocco will be sent. The latter is a good Grape, but not to be recommended for general culture. It does not acquire such a fine colour as the Alicante; the berries are of a different shape, being long oval, and when the two varieties have once been seen together there is no difficulty in distinguishing them from each other.

Of white Grapes adapted for a cool house there is none as yet sent out so constantly good as the Black Hamburgh. Of sorts not having a Muscat flavour Buckland Sweetwater, when well grown, is a splendid Grape. It has been stated that this variety succeeds in a house not artificially heated, under such circumstances it has not done very well with me; the berries contain too much water, and decay very soon after they are ripe, whereas when the fruit is well ripened the berries are firm in the flesh, and will keep for three months. I prefer to grow Buckland Sweetwater grafted or inarched on the Black Hamburgh.

White Frontignan is a very good Grape with a distinct flavour much esteemed by some. The bunches are not generally of a large size, but the berries are rather above

the medium size; it is a very free-bearing variety, and in every respect preferable to the Trovéren Frontignan, which is inconstant, and the berries of which soon change to a bad colour.

In the Golden Champion we were to have a white companion to the Black Hamburgh; it is not as yet universally acknowledged as such, although when well managed it is the best white Grape we possess not having a Muscat flavour. Some growers of it complain that it shows none or but few bunches; I have no fault to find with it in this respect; in the early vinery here a rod of it about 12 feet long showed one or two large bunches on almost every spur, and the bunches are as large on the old wood as on the new. It is like the Canon Hall Muscat in one respect—the flowers are too close together, so that it is well to thin a number of them out before they expand.

Where it can be cultivated, there is no white Grape to equal the Muscat of Alexandria; it requires rather more heat and a longer period to ripen than any of the other sorts I have named. It succeeds well in the same house as the Alicante. When I was in a situation north of the Forth we found it necessary to start the Muscat house on the 1st of February, using artificial heat from that date, shutting up the house early in the day, and maintaining a night temperature of 50°, increasing to 55° and 60° as soon as the Vines showed signs of starting into growth, and rising to 70° by the time they were in flower. In the south of England it is not necessary to start a Muscat house by artificial heat. I wait until the Muscats start naturally, which is about the middle of March, when, if the weather is cold and unfavourable, a very little artificial heat is applied, so that the night temperature does not fall below 50°. This temperature should be gradually increased until it rises to from 65° to 70° at night by the time that two leaves are formed beyond the first bunch, and when the first flowers are observed to expand a further increase of 5° is made. Under such treatment, in the south of England, Muscat of Alexandria Grapes will be perfectly ripe by the first week of September.

As a very late-keeping Grape there is to be found a very excellent variety in the White Tokay; it is not generally so large in bunch nor is it so robust in growth as the Trebbiano, but a large, close bunch is no recommendation in a late-keeping Grape. The Tokay requires the heat of a Muscat house to ripen it well, and this, of course, is against it; but where a late Grape is required not having a Muscat flavour, I would plant this in preference to any other white sort. For a cool house, to ripen with Lady Downe's, there is the new white variety of that name raised by Mr. Thomson, of Dalkeith; in bunch and berry it is exactly similar to the black variety, except that the berries are perhaps larger and of a beautiful golden colour. It succeeds well under the same circumstances as the black kind.

Nearly all the above varieties of Grapes are adapted for pot-culture, and for this purpose it is best to grow fruiting canes in one season from the eye. I have now most of the sorts I have named, strong plants in 12-inch pots, showing three times as many bunches as the plants could finish properly, and the eyes were put in only thirteen months ago.—James Douglas.

ROSE FELIX GENERO—ROSE PRUNING—SYRINGING GRAPES, &c.

I am sorry I ventured to impugn Mr. Radclyffe's decision with regard to Felix Genero, as I presume I am the fast coach alluded to. In this case I rather think I was the slow coach and Mr. Radclyffe the fast. I merely said, if I remember rightly, that Felix Genero had not with me at all come up to the character which Mr. Radclyffe gave it, and having judged in several shows, I only once saw it exhibited last year (though, of course, it may have escaped my observation), and that was in twenty-four new Roses at Oxford, and I think, if I remember right, by Mr. Cranston. I hope I may be mistaken, and that it may come to the fore at the exhibition stands this year. It is certainly hardy and a good grower, but—I will not enter into the buts—I have said my say on this point already, and time will prove who is right.

I can certainly endorse what Mr. Radclyffe says with respect to Baronne Prévost, Gloire de Vitry, Duchesse d'Orleans, and M. de Montigny, as I am slow coach enough to be sorry if old Baronne Prévost is discarded from the garden, and there are few better Roses of that shade of colour than M. de Montigny. I have always seen Souvenir de M. Poiteau very rough. I should like to know what the experience of others have been in regard to it.

In pruning Roses after this severe winter it is curious to notice how uncertain and unequal the effect of the frost is; in some cases succulent unripe growth has been quite uninjured, while old wood on the same plant has been killed. In many cases young strong buds have pushed from last year's wood, while the old wood below is dead. In other trees old wood is alive and the young killed; but in by far the greatest number of cases the old wood has suffered much more than the young. By old wood I mean two or three years old, as I never, on Manetti stocks, allow older, for young and more vigorous wood pushes up each year from the base, and the old is cut away. I have hardly any injury on those shoots which pushed from the base last summer and autumn. The only Roses killed with me have been Céline Forestier, America, and Maréchal Niel, but they will all push again from the root. Maréchal Niel on its own roots seems to bloom freely in pots. I have one now in a 7-inch pot with seven well-developed buds on it, all of which seem likely to open.

I fully expected to be called over the coals for saying that syringing did not spoil the bloom of Grapes. I do not wish to recommend the practice; I merely stated what was my personal observation. I have tried it with Mrs. Pince, Black Hamburgh, and Muscat of Alexandria, as well as with Alicante, and have not found any injury, and my object in stating my experience was that gardeners, who may be unlucky enough to have red spider or other insect pests, as mealy bug, on their Grapes, should not be afraid of the free use of the syringe. No doubt Mr. Simpson is right, that very good, and perhaps the best Grapes, can be secured with proper treatment without the use of the syringe, but I have seen many a house suffering after the bloom was set from want of it. Of course in cold and late houses it would never answer to try the experiment. Many persons, again, are afraid of syringing Grapes when they are in bloom, and recommend a dry atmosphere for the sake of the pollen. I have never found syringing injure the setting of either Vines or fruit trees, so long as the temperature was not too low, and I know one of the best Vine-growers in the south of England, who is especially successful with pot Vines, syringes twice a-day all through the growing season.

I am very glad "C. C. E." has upset another horticultural fallacy with respect to wireworms. He told me his experiment some time ago, and I was in hopes he would publish it. Of all absurd crotchets it seems the most absurd, to fancy a tough-skinned grub like a wireworm, which requires, as "C. C. E." says, a strong thumb nail, would "bursten hissen" (as a Yorkshire man says) with an overdose of rape cake. Even the frog in the fable could not surpass this feat. The only good rape dust could possibly do would be to give the grub something it liked to feed on, and keep it from other food, and also as a manure it might give the plant additional power to fight against the insects' ravages.

I am glad Mr. A. Kerr has spoken up in favour of Golden Champion. With me it has made stronger growth the last two years than any Vine I have, and every shoot on the only plant I have is showing either one or two bunches. I fancy it requires an intermediate temperature, and will not stand either forcing or starving. I ripened five very fine bunches last year. It has certainly a decided tendency to crack, which may be obviated by nicking the stem of the bunch, so as to check the flow of sap. There are other Grapes with finer flavour, but I know none handsomer, and when well ripened it is a first-rate Grape. I know of no one who manages Muscat Hamburgh so well as Mr. Pearson. His bunches last year were wonderful; but I dare not at present state weight or size, and hope Mr. Pearson himself will do so. His plan is to give plenty of leaf-action. I had the curiosity to measure a leaf of a seedling Vine in one of Mr. Pearson's large houses; he cut it off the plant for me, it was 22½ inches across the widest part, and 21 inches lengthways; and to give an idea of the size, I had a *Times* newspaper and rolled it up in it to take it away, and when laid on the full sheet of *The Times* it extended beyond it on each side either way I placed it, and very nearly touched the top and bottom at the same time. A sheet of *The Times* is about 24 inches by 20.—C. P. Peach.

THE GROS COLMAN GRAPE.

I imported this grand Grape from the late M. Vibert about twenty years ago. It is the largest of our purple Grapes, and when thoroughly ripe is exceedingly rich and good, keeping well till December or later. The slow progress that an unknown Grape, or any kind of fruit not English, makes is very remark-

able. I planted my first Vine of this sort in one of my hedge orchard houses. The climate was too cool, and it did not ripen, but its berries and bunches were enormous. It is only within these few years that its good qualities have been discovered. I tasted it last autumn in the vineries of Mr. Miller at Bishop Stortford, and found it of high excellence. I have also heard of it from several growers as being very large and very good. Like all fine Grapes it requires a little heat.—Thos. Rivers.

WILD GERANIUMS.

The wild Geraniums of England are a very interesting family of plants, particularly in respect to their foliage. Such species as Geranium molle, lucidum, and columbinum, from their neatness of growth and extreme hardiness, are well calculated for winter and spring gardening. What we want in these Geraniums are decided and striking forms of variegation which will come true from seed; and these Geraniums are very prolific in seeds, every one of which will vegetate. These species are of the easiest cultivation; the seeds may be sown in July or August, and the seedlings pricked out where they are to remain, or potted singly in small pots and repotted as they may require. They are charming plants for the cold frame or greenhouse.

Of Geranium molle I have found several very distinct varieties, but the best is Geranium molle aureum. It delights in a rich sandy soil, and looks well during the whole of the winter and spring. This plant was sent to a London nursery of note, but owing to my moving here I have been unable to inquire how it has been treated; however, it is a fine edging plant when managed as it ought to be.

I have not yet discovered any variegated forms of Geranium lucidum through not having met with it in any quantity in a wild state. I have no doubt but numerous variegated varieties might reward some careful observer in the head quarters of Geranium lucidum. The whole family seem to me inclined to sport into variegation repeatedly. I shall never forget first meeting with Geranium molle aureum; a nice little colony in the middle of a pasture field in Kent, amongst a host of the plain green-leaved variety, no doubt the progeny of a single plant growing there the previous season. I have had six distinct varieties of Geranium molle, which I may call aureum, albo-reticulatum, striatum, luteo-striatum, marginatum, and one with a clouded or spotted foliage. Striatum only comes occasionally from seeds; the others seem to reproduce themselves freely from seeds, but by far the best of all is G. molle aureum.

Geranium columbinum I have also had with an irregular variegation, and it likewise comes occasionally true from seed.

The only variation I have as yet noticed in the flowers of Geranium molle is a variety with white flowers. I must look out for one with larger petals than usual to breed from, for I find as yet I am only at the beginning of the wild Geraniums of England.—W. E., *Cromwell House*.

DINNER-TABLE DECORATION.

The decoration of the dinner-table with beautiful plants is an art now receiving increased attention. It is my lot to have much of this kind of work at present. I have both on tables and elsewhere in-doors a fine display of showy Tulips, Crocuses, Cinerarias, Primulas, Azaleas, white Lilacs—which are very useful, and of which I have had a succession in small pots since about Christmas, in plants about 18 inches high and half that in diameter, and in full flower—Lily of the Valley, Epacrises, and Roses. Of the last I have a beautiful lot of little specimens of Tea varieties in 6-inch pots, and nothing can be finer for vases or most decorative purposes than their beautiful fresh foliage and ever-pleasing flowers. I put these plants into a pit with a little bottom heat a little more than six weeks ago, giving them something like an average summer temperature, and as they advanced I kept them free of green fly by fumigating as soon as the insect appeared, and they have well repaid the trouble. When the larger plants were put into the different vases I usually decked their surfaces with the best green moss that could be gathered in the woods; but lately I have introduced with benefit into that material a lot of the smaller bulbous plants in flower, such as Snowdrops, Crocuses, &c., and carrying out the same plan in plant stands for the other rooms has also been of advantage. Round the edges of the stands, where we could not put in a pot plant, a pot of Tulips, for instance, was taken, the bulbs singled out, and these put in all round amongst the damp moss.

It is of too frequent occurrence that stands which have to be filled with plants for the rooms have but very little space for good-sized pots with plants in them, and under these circumstances I have at a former time frequently put in flowering spikes of Tritomas, Gladiolus, and heads of Eucharis amazonica in bottles of water hidden amongst the moss, so as to make the best arrangement with the other things.

In carrying out the work of decorating the dinner table in a satisfactory manner it is indispensable to have a good collection of growing plants to choose from. This, of course, will be regulated according to the different seasons in which they are required. Our last season, so to speak, began with, and has continued since, the beginning of winter. Our best plants then were Weatherill's Solanums, Gesnera exoniensis and G. macrantha, which were really beautiful. Soon after these I had Azalea amœna, a fine-coloured species, and although its flowers are not large, they are produced in great numbers. It is a first-rate plant for general decoration, and forces well. All the winter we had nice pots of Iresine, which, with its transparent red colour, has a beautiful effect at night. We had also a collection of Ferns to choose from, though flowering plants were most in demand, and the best of these we found to be the common stove Maiden-hair, Adiantum cuneatum, Nephrolepis pectinata, and Lomaria gibba. As soon as the new year came in I had pots of Lily of the Valley. Shortly afterwards came in a host of the other spring-flowering bulbs. Towards February I was using pretty little plants of bright Rhododendrons with large heads of flower, Thyrsacanthus, Dielytras, successions of Lily of the Valley, and some of the other plants already named. Now we are using good-looking little plants of the common Hydrangea with large heads of rosy flowers. We have also in vases young specimens of fancy Pelargoniums well flowered, plants of the native Primrose procured from the woods, Violets lifted from the open border, and, as I always do, I try to make the best of the materials around me. Much can be done in this way—more than most people imagine.

In making up glasses of cut flowers, some of which have always been on our table, I have lately, in the case of some of the spring-flowering bulbs, been putting in perfect specimens—that is to say, with their leaves as well as flowers, and it gives a much better appearance than when the glasses are filled with flowers in the ordinary way. There is something in the leaves of a plant accompanying its flower which cannot be well described. A Rose, for example, never looks so well as when accompanied with Rose leaves.—Robert Mackellar.

TWO HINTS FOR FRUIT-GROWERS.

I am not a fruit-grower, have no wall, and the only thing to which I can lay any pretension in the shape of fruit culture is a miniature fruit garden, for which I am indebted to my friend Mr. Rivers; but "*nihil horticulturanum a me alienum puto*," which freely translated means, "I never turn up my nose at anything connected with gardening," and as I generally walk about with my eyes open, I occasionally light upon something which not only interests me but may be found useful to others.

I was the other day at Petworth, Lord Leconfield's noble seat in Sussex, and had a leisurely walk through the garden with my good friend Mr. Jones, than whom I know not a better specimen of what a thoroughly good English gardener ought to be. Well, it is not much of a time to be gardenising, but in an establishment like this there is always something to be seen; and I can safely say that I have never seen two such houses as the early Peach and Grape house. The Peach trees are trained over an arched trellis, and others are trained against the back wall; all the trees were evenly cropped with fruit about the size of a pigeon's egg, and would be ready in May—not a red spider to be seen, notwithstanding the vast amount of fire heat required in such a winter as the past to bring trees so forward. Mr. Jones attributed this result in a great measure to a plan I have seen nowhere else. Hurdles were placed over the pipes which run round the house, and of course underneath the Peach trees which cover the trellis; on these hurdles was laid a good thick layer of short hotbed dung, and this was watered two or three times a-day; the heat from the pipes passed up through it, a gentle moisture charged with ammonia was produced, and as a consequence red spider could not exist. Now I do not mean to say this was the sole reason of the fine appearance of the trees, but I believe it had something to do with it, and may be worth recording by those who have similar work.

In regard to out-door fruit, the protection of walls from earl

spring frosts is a matter of great importance, but the expense and trouble of doing it deter many, while there is the danger of leaving the cover up too much, and so coddling the trees. Mr. Jones's plan is simply to place long poles in a slanting direction against the wall, and on these to fix horizontally about a foot apart loosely-twisted straw ropes, roughly done, so that the straws project, and sometimes nearly pass from one rope to the others. This is left on at all times. I can testify that Apricot trees covered thus suffered nothing during those severe days we had the week before last, and that it is a simple, cheap, and effective protection to wall-fruit trees when in blossom. —D., *Deal.*

ROYAL HORTICULTURAL SOCIETY.

APRIL 5TH.

ALTHOUGH not one of the principal shows, there was on this occasion a peculiarly attractive display, not so much of the subjects for which prizes were offered as of those not specially invited. The Roses formed the chief attraction, and the lovely banks of these rivetted the attention of every visitor, and of such there were many. They had a beauty, a freshness, a charm all their own. The splendid plant of Rhododendron arboreum, noticed last week, formed the brilliant centrepiece to the whole.

Class I was for six distinct Odontoglossums. The only exhibitor was Mr. Bull, who had a first prize for O. Alexandræ Trianæ, O. triumphans, O. cordatum, O. gloriosum, O. luteo-purpureum, and a variety of O. nebulosum. The plants were not large, but in good bloom.

Cyclamens were shown in Classes 2 and 3, the former being for collections unlimited as regards the number, the latter for collections of twelve. Mr. Goddard, gardener to H. Little, Esq., Cambridge Villa, Twickenham, was first with a collection of upwards of one hundred pots, many of the plants forming fine masses of blossom, and several of the varieties very beautiful in colour. The second prize went to Mr. Edmonds, of Hayes Nursery, who had also a numerous collection; and the third prize to Mr. James, gardener to W. F. Watson, Esq., Isleworth, who was also first for twelve in profuse bloom, Mr. Goddard being second. For six Cyclamens shown in Class 4, Mr. Goddard was first and Mr. James second.

Cinerarias came next in order in the schedule. The best nine came from Mr. Lacey, gardener to C. S. Mortimer, Esq., Wigmore Park, Dorking. These were compact, well-grown plants, not large, but full of bloom. Compactum, with a white eye and broad rosy purple edge; Delicatum, white, with a narrow edge of the same colour; Ne Plus Ultra, purplish crimson self; and Empress were the most noticeable. Mr. James, who was second, had Blue Bell, always conspicuous by its beautiful dark blue colour, and Miss Smith, a pretty blue-edged free-flowering kind.

Class 6 was for six Amaryllids, Mr. Baxter, gardener to C. Kieser, Esq., Broxbourne, the only exhibitor, taking a first prize with Olga, a beautiful pale crimson variety edged and streaked with white; Robert, bright scarlet; and four other kinds which do not call for special remark. Mr. Baxter also exhibited a fine collection of seedlings, among which Kieseri, blood red, and Duke of Cambridge, scarlet, were striking.

For boxes of six hardy Primroses, shown in Class 7, the first prize was withheld, and a second was given to Mr. Ware, of Tottenham. Golden Chain, yellow with an orange eye, was very free-flowering. Among the others were the double white and double lilac varieties of Primula acaulis.

In Class 8, for six bulbous plants in flower, Mr. Ware had a first prize for the blue Grape Hyacinth, yellow and red Crown Imperials, Triteleia uniflora, the pretty little Narcissus juncifolius, and Fritillaria pyrenaica, with pendulous bell-shaped flowers, dull purple mottled with yellow on the outside.

The miscellaneous subjects were very numerous, and of them the magnificent collections of Roses shown by Messrs. Veitch, William Paul, Paul & Son, and Lane & Son, constituted a show of themselves. We shall not attempt to mention the names of the varieties of which fine examples were shown—they were so numerous, including most of the well-known kinds. Charles Lawson in Mr. W. Paul's collection was most splendid, perfection in bloom and freshness of colour. Facing this was another fine plant of the same variety from Messrs. Veitch, with Madame de St. Joseph, very fine, just beneath it. Marquise de Mortemart in Mr. W. Paul's collection was exquisite, and Beauty of Waltham and Mdlle. Marie Rady were also remarkably fine. Mr. Williams, of Holloway, sent a collection in which were Palms, with Chamædorea Ernesti-Augusti bearing its catkin-like inflorescence, several Orchids, Tillandsia Lindeni, Camellias, and several other plants. Messrs. Lane sent Rhododendrons and Azaleas in pots, together with cut blooms of the same, and of Roses. From Mr. Turner, of Slough, came a fine basket of Mrs. Headly Golden Tricolor Pelargenium, together with baskets of Mrs. Turner, Mr. Rutter, and several other kinds; also collections of Alpine and Show Auriculas bloomed in his usual excellent style.

Messrs. Veitch sent a fine miscellaneous collection, including Dendrobium Farmeri and the Golden D. chrysotoxum in fine bloom, together with several other fine Orchids, Anthurium Scherzerianum with large and extremely brilliant spathes, the white Rhododendron Sesterianum, &c. Mr. Needle, gardener to the Comte de Paris, sent three boxes of Ophrys and Orchids, including numerous species. For this fine exhibition we believe the award of a Lindley medal has been recommended to the Council. Mr. Robert Veitch, of Exeter, sent his White Azalea Lady Poltimore, forming a fine pyramid of bloom. Messrs. E. G. Henderson, of St. John's Wood, sent Rudgea macrophylla with large heads of its white flowers, which it appears to produce freely. From Messrs. Rollisson, of Tooting, came Epacris hyacinthiflora carminata, a free-flowering variety; a collection of Alpine Auriculas; and a collection of Palms, stove and greenhouse plants, and Orchids—among the last, Arpophyllum squarrosum in fine condition. Mr. Bull also sent a collection of Odontoglossums, including O. Pescatorei and Cervantesii, likewise a miscellaneous collection of Palms, Orchids, stove and greenhouse plants, fruiting Ancubas, &c. Mr. Noble, of Bagshot, sent a collection of his beautiful new Clematises—as Miss Bateman, white, very fine; Albert Victor, bluish lilac; Lord Londesborough, a very distinct slaty purple, with a bronze-red band in the centre of each segment. Mr. Ware exhibited six double Wallflowers in excellent bloom, Dielytra spectabilis well grown and bloomed, Spiræa japonica, and a collection of spring flowers. Extra prizes were awarded to nearly all the above exhibitors. Mr. Baxter, gardener to C. Kieser, Esq., sent Tropæolum tricolor trained on a flat trellis, in fine bloom; Messrs. Standish & Co., of Ascot, a box of very fine blooms of Maréchal Niel Rose; and Mr. Williams a specimen plant of the large-flowered Mignonette admirably grown.

Special certificates were given to Mr. Needle for his collection of terrestrial Orchids; to Mr. Turner for his collection of Zonal Pelargoniums; to Mr. Williams for his group of plants, also for his plant of Mignonette; and to Messrs. Standish for their box of Maréchal Niel Rose.

FRUIT COMMITTEE.—G. E. Blenkins, Esq., in the chair. Mr. Lockie, gardener to F. W. Berger, Esq., Court Gardens, Great Marlow, sent six Cucumbers Blue Gown. Mr. Cadger, The Gardens, Luton Hoe, sent two handsome seedling Cucumbers, which were considered by the Committee of good quality; but a desire was expressed that the variety should be shown in a younger state. Messrs. Carter & Co., of High Holborn, also sent a seedling Cucumber, named Marquis of Lorne, 28½ inches long. The same gentlemen also sent specimens of the Sandringham Celery, which in the opinion of the Committee is the same as that which is known as Turner's Incomparable White and the Blanc Court of the French.

Mr. Fowle, gardener to Sir H. Mildmay, Bart., Dogmersfield, sent two dishes of Strawberries, one of which was President and the other Dogmersfield Seedling. A special certificate was awarded to them. Mr. Cadger, The Gardens, Luton Hoo, sent a dish of Keens' Seedling Strawberry, and Mr. Sage, of Ashridge Park Gardens, also sent a dish of the same variety. Both of these were very meritorious examples of cultivation, and both received a special certificate.

Mr. Hepper, gardener to C. P. Millard, Esq., The Elms, Acton, sent two Queen Pines in pots. Mr. C. M. McCrow, The Gardens, Nash Court, Faversham, sent a nice specimen of Ripley Queen Pine weighing about 4 lbs., which received a special certificate.

Prizes were offered for the best braces of black-spined, white-spined, and smooth Cucumbers. The best black-spined were a fine pair of Blue Gown, about 2 feet in length, from Mr. Lockie, gardener to F. W. Berger, Esq., Court Gardens, Great Marlow. The second prize went to Mr. Douglas, gardener to F. Whitbourn, Esq., Ilford, for the same variety. The first prize for white-spined went to Mr. Lockie for Gillett's Recruit, the same exhibitor also sent Berkshire Challenge. Telegraph from Mr. Lockie and Mr. Douglas was first and second in the smooth class.

For salading, Mr. Hepper, gardener to C. P. Millard, Esq., The Elms, Acton, was first with a varied assortment, some forced, some not, consisting of Celery, Endive, Lettuces, Australian, Curled, and Water Cress; Dandelion, Radishes, Mustard, Beet, Sorrel, Tarragon, &c. Mr. Record, gardener to the Marquis of Salisbury, Hatfield House, was second with Telegraph Cucumber, Endives, Lettuces, Radishes, Mustard, and Cress.

FLORAL COMMITTEE.—Robert Fortune, Esq., in the chair. Mr. J. Linden, of Brussels, sent a specimen of Odontoglossum Hallii with two fine spikes of large flowers, for which a special certificate was awarded. A special certificate was also given to Mr. Stevens, gardener to G. Simpson, Esq., Reigate, for a magnificent plant of Dendrobium fimbriatum oculatum, clustered with rich yellow and dark crimson flowers. Mr. Green, gardener to W. Wilson Saunders, Esq., sent Lycaste fulvescens blooming very freely; also a variety of Odontoglossum nebulosum nearly white, with orange spots in the lip. From Mr. Ware came an Iris, the species of which was doubtful, and named ihorica on the Continent. It appears to be Iris pumila. Messrs. Carter & Co. exhibited a pan of Peristrophe angustifolia aurea-variegata, showing its beauty for bedding purposes. Messrs. Veitch sent Darlingtonia californica in flower, a singular North American Pitcher-plant, extremely difficult of cultivation. A special certificate was awarded; also from the same firm came Amaryllis Meteor, a glowing carmine, most splendid in colour. Messrs. Bell & Thorpe, Stratford-on-Avon, exhibited Rhododendron Jenkinsii, closely allied to R. Dalhousiæ, bearing numerous trusses of its large white and pale pink flowers. This was remarkably fine, and received a special certificate. From the same firm came garden labels formed of an alloy of 90 parts

of zinc and 10 parts of lead. These are said to be very cheap and durable. A basket of a dark kind of Polyanthus called Early Admirable came from Mr. Porter, gardener to E. Benham, Esq., Isleworth. It appears to be free-flowering. Mr. Record sent berries of Aralia japonica from the gardens at Hatfield House; and G. F. Wilson, Esq., Weybridge, a plant of Fritillaria imperialis grown by Mr. Turner, nurseryman, Walton-on-Thames, showing fasciation of the flower stem to a remarkable extent.

Messrs. Rollisson & Sons had a first-class certificate for Torenia auriculæfolia, a pretty little plant with light blue, white, and orange flowers. A similar award was made to Mr. James Atkins, of Painswick, for Saxifraga valdensis, a pretty, very dwarf, almost Moss-like species, with white flowers; also for Cotyledon spinosum, forming a beautiful, very regular rosette, and the plant is perfectly hardy.

Mr. B. S. Williams, of Holloway, sent a variegated form of Deutzia gracilis; also Amaryllis Prince Henry, a variety of good form, cream white, feathered with purplish crimson. To this a first-class certificate was given, and a similar award was made to Messrs. Paul & Son for Climbing Victor Verdier Rose. A number of seedling Cinerarias were shown by Mr. George Smith, Messrs. F. & A. Smith, and cut flowers by Mr. Marcham, gardener to E. Oates, Esq., Iver, Bucks. No awards, however, were made. Mr. Jones, gardener, Buckhurst Hill, exhibited several new golden and other Coleuses; and Mr. Lee, Arundel, forcing Pink Princess Louise, a showy red variety.

General Meeting.—J. Bateman, Esq., F.R.S., in the chair. On this occasion no less than fifty-three new Fellows were elected. The Rev. M. J. Berkeley having read the Committee awards, called attention to a cut specimen of the Jonesia Asoca of "Paxton's Flower Garden," to which Saraca indica is given as a synonym, and to that name of Linnæus he believed Bentham and Hooker had gone back. The plant figured in the "Flore des Serres" appeared to have more the habit of a Brownea, to which Jonesia is nearly allied, but there were five or six kinds of Saraca in Java, and probably the plant of the "Flore des Serres" was one of these. The gentleman who had the finest collection of Browneas in the kingdom was Mr. Crawford, of Lakelands, Co. Cork. Mr. Berkeley then produced specimens of the Wellingtonia from the Marquis of Huntley's, at Orton, near Peterborough, showing that the tree was undoubtedly monœcious, the male and female flowers being found on the same individual. Mr. Lee, of Clevedon, had sent, but too late for the Fruit Committee, a box of Morels in beautiful condition, and it was remarked, of those sold in the shops a great many came from Cashmere. A Chinese Primula, with all the petals green and leaf-like, and metamorphosed in almost every conceivable manner, and a Calla æthiopica brought by Mr. Reeves, with the leaf assuming the colour and character of a spathe, were next pointed out as morphological curiosities.

Mr. Berkeley remarked, with reference to Mrs. Lloyd Wynne's prize for Narcissus, that it had been given this year to a collection of varieties of N. Tazetta, which was not her intention, as her object was to bring together species, not mere varieties. She had again offered the same prize, but for species, and as these could not be all shown at one meeting, it was proposed to commence at the next one and to continue the competition to the first April meeting next year, cut specimens to be admissible.

Major R. Trevor Clarke expressed a hope that in the future a prize given for a special scientific object, would not be given to bulbs to be found in every seedsman's window.

Mr. Bateman congratulated the meeting on M. Linden, of Brussels, having sent Orchids for exhibition, and trusted that Belgian horticulturists would follow the initiative. M. Linden's plants had come too late for the previous meeting, and, with the exception of Odontoglossum Hallii, had not improved; of it, however, the specimen was the finest he had ever seen. There had lately been some controversy as to how Odontoglossums should be grown. A writer had recently stated that they were always found growing in moss, and he had no difficulty in lassoing them from the trees, whilst with other Orchids it was frequently necessary to cut off the limb, and sometimes to cut down the tree. His own conclusions were—1st, that they should be kept generally cool; 2nd, that it did not do to put them on blocks, but that they should be potted and covered with moss; and 3rd, with regard to heat, that experience alone must decide, a few degrees making all the difference between healthy and unhealthy growth, between life and death; and he instanced a case in which during the late winter out of a collection of Orchids half a dozen were killed. These came from Costa Rica, whereas they had been supposed to be from Peru.

With regard to Vanilla, referred to at the last meeting, he had hoped to have been able to glean more information than he could offer in answer to Mr. Hanbury's letter. He had found that the best Vanilla had long and comparatively thin pods, and there was an inferior kind with pods like Bananas. He remembered that in this country J. Dillwyn Llewelyn, Esq., of Penllergare, used to grow Vanilla to great perfection. There were other plants, however, which yield scents similar to the Vanilla; for instance, a species of Cypripedium from Chiriqui had pods more fragrant than the true Vanilla, and instead of scrambling over a house, would yield when only half a yard high.

Mr. Berkeley remarked that nowhere had he seen Vanilla so successfully grown as at Lord Fitzwilliam's, where it was superior even to that of foreign production. He mentioned also in connection with the subject of sweet-scented plants, that lately he had seen children in the woods picking Violets not with the stalk, but merely the heads, and on inquiry he found that these were for sale to the chemists and druggists.

Major Clarke, having been asked for his experience on Vanilla, said, though accustomed to crossing plants, he never could get it to set. He believed there were bad-setting varieties, for he had set V. planifolia year after year without result.

The proceedings closed with the announcement that the next meeting would be held on the 19th inst., when there would also be a bazaar in aid of the French relief fund.

ENTOMOLOGICAL SOCIETY'S MEETING.

The March Meeting of this Society was held at Burlington House, the chair being taken by Mr. A. R. Wallace, the President. The Baron Selys-Longchamps was elected a Foreign Honorary Member of the Society.

Mr. J. Jenner Weir exhibited a small collection of Butterflies from Madagascar. It did not contain any new species. Mr. Butler, with reference to the question as to the effect of mountains in limiting the range of species of insects or their varieties, exhibited distinct varieties of the Butterfly Cœnonympha Satyrion, which he had taken on the opposite sides of the Gemmi Pass in Switzerland, at Lenk and Kandersteg.

Mr. F. Smith exhibited some small branches of young Ash trees communicated by the Rev. Mr. Hellins, from which the bark had been stripped in various parts by Hornets. He stated that the paper of which Hornets' nests are composed varies in its strength, being sometimes quite tough, but that it is always made of decayed tinder-like wood. Réaumur had observed the same fact, and had considered that the bark was removed, not for building purposes, but to enable the insect to get a supply of sap for food.

Mr. Dunning exhibited species of the bird Louse which infests the peacock, and which he now finds is named Goniodes falcicornis, although Linnæus had more correctly applied to it the name of Pediculus Pavonis.

Mr. Lewis exhibited some monstrosities occurring in Lepidopterous insects, in which the antennæ differed in size in the same insect; also a Noctua satellitia, in which the right antenna was entirely wanting. Mr. F. Smith communicated a statement he had met with in a work of travels affirmative of the luminosity of Fulgora, recorded in the "Revue Zoologique" for 1844. Dr. Sharp sent some notes on British species of Oxypoda, a genus of Rove Beetles; and Mr. A. Müller an account of some galls made by a species of Cecidomyia upon the leaves of Campanula rotundifolia received from Glasgow.

Mr. Lowne read a paper "On Immature Sexuality in Insects," which he had written in consequence of having observed in the Holly Land wingless specimens of a Grasshopper, which he considered as productive larvæ. Hence he was induced to think that species originated occasionally from the maturity of the sexual organs before the acquirement of the adult characters, in consequence of the early development of these organs in the embryo and larva. He further stated that in his opinion the larva and pupa were states of development which had been acquired during a long series of ages, and added, in the discussion which took place, that possibly ten millions of years ago insects were developed in their perfect state!—a proof that in the mind of Darwinian naturalists development is not always identical with progress.

Mr. Briggs detailed experiments which he had made upon Liparis dispar and B. Cratægi, with the view of determining whether the numerical proportion of the sexes, and even the sex itself, were dependent upon the alimentary treatment of the caterpillar. Such suppositions were, however, completely negatived by his observations.

Death of Baron Hugel.—This gentleman's name is associated with so many plants, that it will be familiar to many of our readers. He was founder of the Imperial Society of Horticulture at Vienna, and was Austrian Ambassador to the Court of Belgium. His death has recently been announced.

ORMSON'S PATENT SYSTEM OF HOTHOUSE VENTILATION.

What a triumph it is for British horticulturists to bring under artificial culture in an unfavourable climate the denizens of the sunny south to greater perfection than they attain in their natives climates—to make them yield flowers finer and more abundantly, fruits larger and richer in flavour, than in their native lands! The Vine bears freely in the open air in France and Germany; Spain, Portugal, and Italy are highly favourable to it, but who ever saw Spanish, or Portuguese, or Italian Grapes equal to, or even approaching, those from Combe Abbey, Garston, Dalkeith, or Castle Kennedy? Who ever saw West Indian Pine Apples equal either in size or flavour to those grown in many an English and Scottish garden? And yet all this, and much more, is done despite the rigours of frost and the gardener's still more dreaded enemy damp. It is possible

to guard against the one by using more fire heat, and happily where that is most wanted there the necessary material is generally to be found in the greatest abundance, but much fire heat brings with it the necessity for much moisture, otherwise numerous evils follow in its suit, and in any case, and especially in the latter case, ventilation must be insured. The object of that ventilation may be simply to afford a supply of fresh air, without which plants, like animals, cannot live, or it may be to dry up damp, or lastly, it may be to lower the temperature; but whatever be the object, there can be no question that the admission of large bodies of air is extremely injurious to plants growing in an atmosphere heated to a great degree above that of the external air, as in hothouses in winter. Accordingly great care has to be taken in ventilating at that season to avoid exposing the plants to sudden chills and draughts, much watchfulness of the weather has to be exercised to seize favourable moments for admitting air, and many devices are adopted to prevent that air striking directly on the inmates of heated structures. It is sifted through netting or wirework, and made to pass over the hot-water pipes or other heating surfaces, and it has even been carried by air drains through heated borders, before being allowed to come in contact with the foliage. By such means, with care and judgment, excellent results have been obtained, but still an efficient mode of winter ventilation, one which would render the cultivator tolerably independent of the state of the weather, has long been a desideratum, and this Mr. Ormson, of Chelsea, claims to have achieved. Last July he exhibited at Oxford a model of his system, which was noticed at the time in the pages of this Journal, and which was highly approved of by those who saw it. It was, however, only a model, though sufficient to show the principle, but now he has erected at his works at Stanley Bridge a house of which the following is a brief description.

The dimensions are not a matter of consequence, as they, of course, may be varied according to circumstances; however, the length of the lean-to is 28 feet 2 inches, the width 16 feet 9 inches. The rafters, 4 feet apart, are hollow, to carry off the heated air to ventilators in the back wall, the amount permitted to escape being regulated at will. The hollow in the rafters is concealed by an iron grating of an ornamental character, through the perforations in which the heated air passes. The whole is glazed with large squares of very strong glass, that which Mr. Ormson employs for such houses being 32-oz. The squares in front are 2 feet wide by 19 inches long, those in the roof about 1 foot 10 inches by 1 foot 9 inches, and they overlap about a quarter of an inch; grooves in the rafters and sash-bars carry down the condensed moisture to a gutter in front which is entirely concealed; and in glazing the whole of the putty is under the woodwork, and, therefore, not exposed to the action of the weather. The house is very light, from the large squares and small amount of woodwork employed, at the same time its appearance is elegant, and it is evidently very strong. The great features, however, are the means of heating and ventilation. Summer ventilation is secured by the front sashes opening outwards simultaneously by a rod and lever arm, and similarly those at the apex of the roof are lifted up by a lever with a balance weight, which is so adjusted that the touch of the finger will open the whole of them to any extent. This balance weight is intended to be concealed beneath the floor.

It is, however, the method by which ventilation is secured in winter that constitutes the important difference between this house and all others. The heating medium in front consists of hollow cylinders 3 feet long, with an outside diameter of 1 foot, and an inside diameter of 6 inches; the hot water circulates in the interval, the heating surface being more than equal to that of four 4-inch pipes. The circulation is maintained by 3-inch pipes connecting the cylinders with each other. We now come to the mode of admitting air in winter, which, after the foregoing explanations, will be easily understood. Passing from the centre of each cylinder is an airway to the outside, into which the external air can pass on a sliding ventilator, similar to those used in railway carriages, being pushed back. The cold air has therefore to pass through the centre of the heated cylinder and up among the four connecting pipes before entering the house, and can be heated to such an extent that fresh air may be admitted without perceptibly lowering the temperature. Moreover, it is not admitted in a direct current, but is forced to take a course at right angles to that by which it enters the cylinders, again to pass out of these at right angles, and then, being in the centre of the intervals between the rafters, must turn laterally right and left before passing up the hollow of the rafters to the ventilators in the back wall, which are opened and closed together by a rod.

In addition to the heated cylinders in front, ordinary piping is used to obtain the requisite temperature, the quantity of such piping employed at any time being regulated by valves; and to afford the requisite amount of moisture, evaporation troughs are provided, both on the cylinders and ordinary piping.

ADVICE TO YOUNG VIOLET-GROWERS.

Will you tell me and my sisters how to grow Violets? We have had for more than two months lots of Crocuses, Hyacinths, Tulips, Cinerarias, Primulas, and other early-spring flowers in-doors, and our spring flower garden is already beginning to look bright with Hepaticas, Primroses, Crocuses, Scillas, and other beauties—but we have no Violets. This seems a mistake. A friend of ours brought us the other day a nice bunch of Czar Violets, plucked from the open ground, and they filled our sitting-room with such a delightful perfume, that since then we have determined to try to grow them. Last autumn we bought a few plants of Russian Violets, put them in pots, and placed them in a pit where we keep our Geraniums in winter, but they have all died. We did not mean them to die, but they did. Can we grow them from seed in the same way as we grow mixed Pansies for our flower garden? We believe our "old Gooseberries," which we hope to preserve for a long time to come, will tell us in their usual good-natured way the best way to proceed.—Sarah Ann, Clara, and Amy Alice, *Geranium Cottage, Beulah.*

[Oh! for a peep in and about Geranium Cottage in the delightful region of Beulah! We daresay our good friends may wonder, but it is no less a fact, that for something like a month past, though rejoicing in, we have been heartily and actually weary of Violets. We love them dearly in moderation—delight to inhale their odour as we pass by solitary plants or even borders of them; but it is anything but a pleasure when vases and vessels of various forms are to be filled with them in a confined place, to be scattered afterwards in large rooms. Even there our opinion is that it is very easy to have too much of even a sweet perfume. We have a strong belief that sweet-scented flowers in rooms, or, indeed, flowers of any kind, that are not growing in a healthy manner, are injurious. The whole system of embellishment by flowers in rooms needs thorough examination. What more common on festive occasions than to find rooms unduly crowded with plants and evergreen wreaths, as if the crowds of reasoning beings did not enough pollute the air which for the time they were forced to breathe. We have been obliged to go into the open air when dressing epergnes with lots of Violets. A few will ever be agreeable, and do no injury—masses of them in a confined space are very trying to many people. We have no doubt our readers will know well how to enjoy the rich scent without being injured by too much of it in a limited space.

There is a great diversity in different individuals as respects scent. We have known some who declared that their highest idea of luxury would be to lie among a mass of full-blossomed Hyacinths. We never could manage to regulate a good-sized bed in full bloom without experiencing a headache.

One word here as to Violets, and especially to those who love their rich perfume without its being at all overpowering. Keep the flowers dry, and let them dry in a shady place. The flowers will become like mummies, and still the scent will remain. We have known clothes mildly scented for from six to twelve months by a few dried Violets. When gathered Violets are placed in water, they will retain their apparent freshness long after the scent is gone. They will actually have a scent the other way, even when they look seemingly fresh. As stated above, fresh blooms dried will retain their sweet scent for months.

We mention this because the best plan for having a moderate scent of Violets in rooms is to have a few blooming plants in a window, where they can enjoy the sunlight. Cut flowers, and even sweet-scented plants, set in shady places—entrance halls, staircases, &c., are so many sources of unpleasantness and disease to the human residents. We feel for plants in such positions, much as we should for a man deprived of light and pure air. A small posy of Violets will be very pleasing where a greater number would be nauseating and depressing.

But to our task. We cannot tell how the young ladies failed with the Russian Violet, except it be that they killed it from over-kindness. It requires a certain amount of intelligence

for people to act on the fact that too much nursing is as dangerous to some plants as too much cold and exposure are to others. It could not be such ignorance on the young ladies' part. Of all Violets, there are none sweeter to us than the retiring blue and white sweet blooms, though small, that in many places are found on our hedgebanks and woodlands in spring. This may be partly owing to the fact that we never see such retiring sweetness without thinking of the times when in our young days we timidly presented a carefully culled posy to the bright-eyed maiden we dearly loved, and dreamed about hundreds of times, without ever being able to summon up the courage to say a word of the love which we felt. Ah, there have been to numbers of us many a monitor to conscience, many a green spot in memory, many an incentive to keep a youthful evergreen heart within us—even though we are now, as our friends tell us, becoming "old Gooseberries"—that have been the consequences of agencies that the agents themselves never knew.

The next sweetest, though individually small, is the Russian Violet. It may be raised from seed; in general it comes very true, and in a bed we have seen thousands of seedlings self-sown. The only objection to them is that they do not bloom so early or so profusely as plants raised from cuttings of runners, or, better still, by division of the plant. We would, therefore, advise procuring some plants, either now or as soon as they are out of bloom, then tearing the large plants to pieces, and planting every bit which has a little root, say 4 inches apart, in rich, rather light loamy soil, shading them a little till they are growing freely, and afterwards giving all the air and sun possible, with waterings when necessary. Such plants in a mild winter would produce flowers all the winter. Here let it be remarked, however, that though it would require a strong frost to injure the plants, a frost of no great keenness will rob the blooms of their scent: hence, when an opportunity offers, every alternate plant in the rows, and every alternate row, might be taken up and planted under glass, or potted in 4 or 5-inch pots for the window. If this is not done, and the blooms are valued, they must be protected with mats, &c., in severe frosty weather. The plant is so hardy that scarcely anything will much injure it, except excessive moisture. We have a bed that will do little good until late, if then, from being twice flooded during winter. We put a bank up to prevent the water from a slope of gravel flowing over it, but the mischief was effected before we did so. We had plenty more, otherwise we should have missed them.

On raised banks, wherever there is no stagnant moisture, the Russian Violet will flourish, but it likes change of soil. On the whole it may be said to do best the second season; but little pieces planted in April, attended to during summer, and free from excess of moisture in autumn and winter, will produce in abundance in the following winter and spring. From such plants, say from 5 to 6 inches in diameter, we would hardly venture to say the number of scores of blooms we have counted in March. To have the flowers large for the sort, the plants should not remain long in the same ground—not more than two years, though moderate-sized flowers may be obtained from plants that have so stood for a number of years. Keeping in view what is said above of the effects of frost on the scent, we have often been surprised at the number of gatherings which could be had from one or two lights in a frame or pit filled rather closely with small plants which had been well exposed during the previous summer. We do not know of any sort that will yield in winter and early in spring such a quantity of bloom in a small space, and the scent is rich, though the individual flowers are small.

The next best Violet, in point of earliness, and far superior in size, is a triple-sized Russian—The Czar. The whole plant, leaves as well as flowers, is much larger, and the plant is equally hardy, though with us it does not bloom in general so early; but out of doors we had some gatherings at the end of February, and we have had them fine throughout March. We had some in a cold pit that did tolerably well in winter, though the quantity of flowers would not equal that from the Russian. Besides the size and richness of the bloom, the strength and length of the stem or footstalk of the flower is a great advantage. With all lovers of the Violet it is well worthy of a place, planted out in a cold pit or in pots for the winter, to precede those out of doors. It is very common to have under glass large flowers on footstalks from 6 to 8 inches long without other artificial heat than the glass covering—a matter of importance when using mixed flowers for an epergne or vase. We have noticed no seedlings of The Czar coming naturally, and, indeed, we have not noticed any seed pods, though that might be owing to not looking for them; but here, as in the case of the Russian Violet, we would advise obtaining a few bulky plants, and from April to May tearing them into as many pieces as it is possible to make, with a little bit of root attached to each. The pieces which have no roots should be placed at first under a hand-light. Plant the former 6 inches apart if you purpose to take up every alternate row, and every alternate plant in the row left, to be potted or put under glass. This kind wants at least a foot of space when allowed to grow in the open ground, as the plant is a free-grower. Little pieces planted out last May a foot apart nearly cover the ground now, and have yielded in great abundance. This kind succeeds best in a rich rather loamy soil; and if our soil were light we would not only give it a fair portion of manure, but we would make it as firm as possible. One of our contributions to the gardening of the hereafter would be this idea, of consolidating soil light and sandy, and manure top-dressing. By so doing we could grow plants having that preference whilst securing many of the advantages of a compact loamy soil. We have had The Czar blooming beautifully in pots, taking up the plants in October with good balls, and potting them firmly, not loosely; but, like most Violets, it will not stand much heat. Our short experience would lead us not to keep it longer than two years in one place. Our actual practice has been with one-year-old plants—that is, the little bits of last May have flowered most freely this spring, and those under glass moderately in a cold pit in winter. But for the dark winter, they no doubt would have done better. The litter over the glass was several times not removed for three weeks. A good plant in a 6-inch pot, potted in October and protected until the New Year, ought to yield many fine blooms in a window after the middle of February.

Of white Violets, after trying a number of single and double varieties, we have actually fallen back on what we consider to be the single white of the hedgerows. We have just now (March 25th) a short row, 15 inches wide, a white cloud of this sweet-scented variety, and it comes in well to relieve blue and lilac kinds. Cultivation greatly improves the common white. The flowers range between the sizes of the Russian and The Czar. It, too, is the better of frequent changes of soil, and may be easily increased by runners and division. All the double whites which we have been able to see and grow have been rather dirty in their white, have not bloomed freely, or had very short, slender footstalks.

We lately stated that we had not seen the many new Violets, and requested information respecting them. Since then a gentleman highly praised a double one, The Queen, and sent a couple of pot plants, small, but showing flower. What it will be when it has more room to show itself we cannot say, but the flower at present, though double, is a sort of mixture of white, pink, and grey—neither one thing nor another. However, we cannot give a character to it, for if fairly tried it may be a very fine variety, and worthy of its name. The flower promises to be about the size of the Double Blue.

Of all hardy double varieties, the Double Blue is perhaps the best. There are many varieties of it, such as the Tree Violet, the flowers smaller and more orbicular in form than the old blue, which has flowers flatter and larger. So far as the tree form is concerned, one can make every kind of Violet into a tree Violet by growing the Violet to a single stem from 4 to 10 or more inches in height, and leaving a head like a little Palm or tree Fern. These do best in pots, and well treated with rather close loam and rich manure produce blooms freely. Out of doors this fine double blue Violet does not flower so early as the Russian or The Czar. It will always repay the attention given to it. It is greatly improved by fresh quarters every two or three years, and a loamy or compact soil well enriched with decayed manure. Anything like standing moisture is its abomination. When well cultivated, the flowers of this kind are large, and are valuable for distillation, also, as already stated, for drying. For bouquets and vases the shortness of the flowerstalks is a drawback, but great quantities of rich-scented blooms may be obtained from a small space. It is propagated by runners, but best by division of the plants.

With regard to our favourite, the lilac Neapolitan, to succeed well out of doors it requires a warm place, free from stagnant moisture. It is well worth the protection of a cold pit or frame. It will do very fairly for two years, but it succeeds best when the plants are taken up, divided into little pieces, planted say 8 inches apart in rich loamy light soil, watered during the summer, not a single runner allowed to grow, and then the plants taken up and potted firmly, or planted firmly in a bed

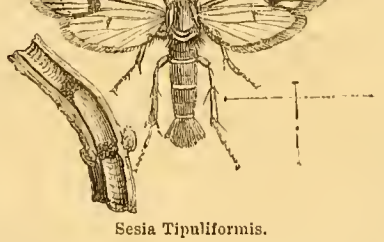
of rich soil in October or November, with glass sashes over them. This rich Violet does better in a cold pit than in a window, though of all Violets it stands a little forcing best.

If some of our readers can further help our Geranium Cottage correspondents we shall feel obliged, and the more especially as we know but little of the new Violets, though as anxious to know about them as if we were not confirmed "old Gooseberries."]

SOME PREDATORY INSECTS OF OUR GARDENS.—No. 6.

Gardeners, like anglers, ought, I think, to be meditative men. In their occupation there is nothing that need put them in a hurry, and many departments of horticulture give abundant opportunities for thought; yet it would not do for them to be pondering too frequently over their insect enemies, seen and unseen. How the gardener thinks about the latter will depend very much upon his natural temperament. He may, if of a genial disposition, congratulate himself that it is a very good thing some of those insects that are most troublesome in the garden are not visible, and are chiefly known by their results, because, as they could not be effectively reached and operated upon, it is just as well not to know annoyances which cannot be remedied nor effectually checked. But if he be of a pensive cast of mind he may ruminate over insect pests until the seen effects of their jaws seem as nothing comparatively to the ravages which may be going on through the agency of insidious enemies lurking in the twig, or within the curled-up leaf, or burrowing in the ground to devour the root and bulb, or emerging therefrom at night to work, side by side, with snails and the like upon the young leaves and the buds. Nay, carrying the reflection a little further, he may drop a tear amongst his early Lettuces as he considers that this is very nearly the same thing that occurs in human life, where a man's worst enemies are so often found not to be those who openly oppose him, but those who as neutrals or as seeming friends win his trust, or at least do not awaken his suspicion. But let me not moralise any farther. I should not, perhaps, have fallen into this strain had not my attention been called this very day to a tolerably well-known garden enemy, which we really cannot somehow be angry with in spite of the harm it has done us.

Making a "tour round my garden" I observe just now that sundry branches and twigs on my Currant bushes give evident marks of the destructive influence put forth by the caterpillar of the Currant Clearwing (Sesia Tipuliformis). It is only now and then that this caterpillar will actually kill a bush, though I have noticed some die which have had repeated attacks made upon them through a series of years. The effect to be generally noted is the dying-off of certain branches, the rest of the bush flourishing, and apparently not having its fruit-bearing powers at all interfered with by the insect; for, indeed, were the boughs mined by the caterpillar to die off at once, it would be unfavourable to the continued existence of the species, since its nutriment is only the living pith. Nor, so far as my own observations go, do the shoots in which it has penetrated die the year in which they have suffered; I believe that they manage to put forth leaves the next season, and perhaps another. The Black Currant, it is notorious, suffers more from the attacks of this Clearwing than do the Red and White Currants. I have some suspicions that it may occasionally be found mining in the canes of the Raspberry, as the moths not unfrequently settle on Raspberry bushes. When it has once gained a footing in a garden this species is not easily eradicated. In Chelsea it has been well known for many years, and some of the earliest recognised British specimens were taken there. I have seen signs of its presence, however, in various market gardens about London. Many localities have been named throughout England and Scotland; whether it occurs in Ireland I cannot say.



Sesia Tipuliformis.

I used to imagine that the eggs were deposited by the females on the terminal twigs, but recent observations do not confirm this, the mines of the young caterpillars being seen in a variety of positions, and at all ages they may be found working both upwards and downwards in the shoots and boughs, it being noticeable that they prefer the latter as they increase in size. At the commencement of the winter the caterpillars are small; they continue, however, to feed throughout the cold season with little or no intermission. Under certain circumstances they will mine down a twig or branch which has been tenanted before by a more juvenile individual, or by an individual of the preceding year; this is, however, unusual. Some tracks will be found in which a caterpillar has worked along for a time, and then turned and retraced its course. The external air these caterpillars have a decided objection to, nor do they ever emerge in order to migrate from one bush to another, as is said to be the case with some internal feeders.

Ordinarily, the caterpillar of the Currant Clearwing is prepared to become a chrysalis by the end of April; I have seen seasons when the change has been much later, through growth having been retarded by a chilly spring, but even then the moth was not at the usual time. This year I find the species is pretty forward, considering the length of the winter, though there are some differences of size amongst those I have turned out of "house and home." Not a particularly pleasant-looking caterpillar, certainly, white and flabby, yet of a form adapted to its tunnelling life.

The chrysalis is most usually placed at some node, and a portion of the wood is removed by the caterpillar ere it changes, only such a film being left as the chrysalis can force its way through, the segments being furnished with hooks; and through the hole it makes when the moth is ready to emerge the empty case is left as a relic, and an intimation to the gardener that the particular individual has done his work and taken himself off to enjoy the June sunshine. The moth, indeed, is not at all moth-like, the transparent wings and slim body, coupled with the circumstance that it delights to fly in bright weather, would lead many to suppose it some species of fly, and at the same time it so happens there are several species of Diptera on the wing rather resembling it in appearance. Though fond of sunshine, this insect takes short flights, and it is notable during their season how soon a passing cloud will make all the moths settle down on the Currant leaves. Occasionally in the evening specimens will come to flowers, but this is not a frequent occurrence. Rarely do they fly far from the bushes in which they have been bred. A singular account appeared in one of our entomological journals some years ago, stating that a number of these moths had been taken in a kitchen. The only explanation in this case, if the name was correctly applied, must be this, that somewhere adjacent to the place indicated chippings of Currant bushes had been put, and from these, which had contained pupæ of the species, moths emerged at the usual time. The only way to check the ravages of this Clearwing is to capture as many of the moths as possible, and the sooner after their appearance the better, ere the females have had time to deposit eggs.

There is another species of Clearwing not at all infrequent in some of our London suburbs, and which is pretty generally distributed in the south of England. This is the Red-belted Clearwing (Sesia Myopæformis), and as it appears in the winged state at or about the same date as the preceding, they may be sometimes seen sporting together in our gardens. This species has a red belt, which at once separates it from the Currant Clearwing with its yellow bands. Another red-belted species is known, however, a feeder on Birch wood, occurring in different spots from Myopæformis, and being a larger species. I should hardly have supposed that the species before us could have done material injury, but a market gardener assures me that in his orchards to the south of London in certain seasons these moths are numerous enough to affect the fruit-bearing powers of some of the Pear and Apple trees there. That they actually kill trees, or even saplings, I do not believe; the latter do not seem to be usually objects of the attack. The caterpillar, like that of Sesia Tipuliformis, lives from autumn to spring, and feeds with little or no intermission. When occurring on Pear trees it is found most frequently in the wood of the trunk. Newman states that he has seen "between sixty and seventy in a piece of Pear-tree wood about 3 inches long," so that they must be pretty closely packed sometimes. Feeding on the Apple, it prefers the branches. I do not see that any effectual means could be devised for destroying the caterpillar of this species, and the moth is not so easily netted as its relative.

The Lackey Moth (Bombyx Neustris) passes the winter in the egg state. Each mother moth deposits her eggs in one batch in the form of a ring round a branch of some tree or shrub where they defy all changes of weather, through their being coated with a substance secreted for the purpose. An entomologist who has dissected this moth found in the lower part of the body two pear-shaped glands, filled with a liquid secretion; this flows out by degrees as the eggs are deposited, and envelopes them. It is quite insoluble in water. In the centre of each egg is a depression, out of which the caterpillar issues soon after the first appearance of leaves in the spring. The shells of the eggs remain, not being eaten by the young caterpillars, as is the case in other species.

Bombyx Neustria.

The Lackey caterpillar shows little or no inclination to attack the produce of the kitchen garden; in former years, however, it was very injurious in orchards, and occasionally an unwelcome visitor to wall-fruit trees; the unpleasant webs are also to be seen extended upon various shrubs in gardens, especially where they are flanked by Hawthorn hedges. It is even said to feed on the unpalatable leaves of the Laurel. Now, from many places we find it reported that the species is scarcer than formerly; near London there are few localities where it occurs, though once very abundant in its vicinity. I fancy the species has of late shown a tendency to increase, and a season or two favourable to its development would be very likely to render the "lackeys" so troublesome as to necessitate their destruction in spite of their beauty, for they are really handsome creatures when nearly adult. The body is striped with black, white, orange, and blue. On the head are two spots just in the position we generally expect the eyes of an animal would occupy; they are not these organs, nevertheless, the eyes being small and unnoticeable. This caterpillar is also clothed with black and rust-coloured hairs. Directly a brood have issued from the egg they unite their labours in the construction of a web, at first, perhaps, so small as only to occupy the top of a twig. Then they migrate a short distance and spin a larger tent of silk, or sometimes, instead of migrating, they content themselves by increasing it, so as to embrace within it other twigs which may happen to be within reach. This habitation serves them for a shelter in bad weather; contrary, however, to the practice of some others, when casting their skins, they do not retire within it, but fix themselves on the exterior, in order to throw off their old garments, which remain attached to the web. Bonnet's description of a party of these "lackeys" issuing from their nest is rather imaginative. "An agreeable sight is it," says he, "to see several hundreds marching after each other in straight lines, others in curves of various inflection, resembling from their fiery colour a moving cord of gold stitched upon a silken ribbon of the purest white; this ribbon is the carpeted causeway that leads to their leafy pasture!"

After the last change of skin the caterpillars scatter, and each feeds alone. Shake a bush on which they are feeding, and on which you will notice that when in repose they lie quite extended, and down they fall, not rolling into a ring, but immediately regaining their feet endeavour to regain the branch they left. The cocoon is very much of the size and shape of that of the silkworm, though the silk is of a very different nature, and intermingled with a yellowish powder. The chrysalis is hairy like the caterpillar. The moths are not on the wing in July and August, and they have an insane partiality for immolating themselves in lights when these are accessible. Unquestionably the best way to diminish the number of the caterpillars of this species is to seek out and crush during the winter the sufficiently conspicuous zones of eggs.—J. R. S. C.

CUCUMBER CULTURE.

I was very glad to read Mr. Sage's excellent notes on summer Cucumber-growing. I know no one better qualified to write with authority on this matter, for I have seen the practice he describes carried out in its integrity season after season with invariably the same results—vigorous, sturdy, short-jointed growth, an abundant and continuous succession of perfect fruit fully developed, and foliage so healthy and green up to the day the plants were destroyed, as to cause one to regret the necessity for their removal.

Supplementary to Mr. Sage's paper, I wish to offer one or two observations concerning the soil most suitable for Cucumbers, and its application. Young Cucumber plants are frequently encouraged to make a luxuriant growth as quickly as possible. This is done by subjecting them to a brisk, close, moist temperature, and by letting the roots ramble into a large quantity of soil at once; the result of this treatment is generally a few fine fruit at first and afterwards a few occasional imperfect fruits, but nothing like the steady supply, increasing in quantity, and of that uniform excellence throughout to which proper treatment leads. Now, as Mr. Sage has clearly shown, the right method of culture is not at all difficult, for the practice which he followed in the stove at Surrenden is applicable in principle to Cucumber culture in all other kinds of houses.

From certain instances of failure which have come under my notice I am led to conclude that young Cucumber plants are frequently planted in soil of a close heavy texture, which, placed in large quantities over the medium for supplying bottom heat, gradually settles down into an inert sodden mass, almost impervious to the action of the air, therefore unfit to promote healthy root action, and so the plants soon lose their pristine vigour, becoming sickly unsightly objects, fit only for the rubbish heap. It may be thought I have quoted an extreme case—it may be so, but such instances are by no means uncommon; and as such faulty practice can only lead to disappointment and annoyance, it must be best to understand the evil and apply its remedy.

The soil, then, for Cucumbers should be of a coarse fibrous character, broken roughly to pieces and given to the plant in just sufficient quantities to maintain its vigour unchecked. If this rule be followed no rich stimulants will be required until the plants become somewhat exhausted, when, as Mr. Sage has explained, dressings of pure rich manure are substituted for the fibrous soil, and even these dressings are carefully applied, not in overwhelming quantities, but in layers of moderate thickness.

Given to the plants thus, soil never can become sour; the multitude of roots seize hold of every particle of it, acting as a capital index of the plants' requirements, for, as the soil becomes crowded with roots, these may be seen on all sides peering out of the soil with a pert inquiring air, asking for more food in an unmistakeable manner.

It is frequently stated in seed catalogues that certain kinds of Cucumbers are fine exhibition varieties; but these are in most instances just the sorts to avoid. What we want is abundance of crisp fleshy fruit, growing about 1 foot in length, and not much given to seeding. Cucumbers are not generally grown to be looked at; they are not sent to table entire, but are sliced up and handed round in readiness to be eaten, therefore the kind producing fruit freely and of a sufficient size for such a purpose is the best. Masters's Prolific is a sort which fulfils these requirements better than most others; so truly prolific is it, that when well grown its fruit is produced in clusters of two and three at every joint, and every fruit becomes fully developed. To those who prefer larger fruit I can recommend Pearson's Long Gun as an excellent variety in every respect.—Edward Luckhurst.

NEW BOOKS.

Handbook of Hardy Herbaceous and Alpine Flowers. By W. Sutherland. W. Blackwood & Sons, Edinburgh and London.

"Herbaceous and alpine plants have been so long banished from gardens of all grades, that they have become unfamiliar to those even who once knew them well; and the mass of those who have embraced gardening as a business pursuit or a means of recreation within the past twenty-five or thirty years, have had few opportunities for acquiring any but the slightest knowledge of them of either a practical or theoretical kind. For until within the past few years, so little general interest had been taken for long previously in these old useful tribes of plants, that even the periodical press, on which we depend for guidance in our tastes and objects, has rarely been encouraged to make any but passing allusions to the introduction of new species, while the names of the older ones have been of the rarest occurrence in its pages. There are, however, many signs of a reaction in their favour at the present time."

All this is quite true. We are well pleased to notice the reaction, and Mr. Sutherland is the right man to promote it. He is gardener to the Earl of Minto, and formerly he was

manager of the herbaceous department in the Royal Botanic Garden at Kew. He has a "bias"—a fondness for herbaceous plants, yet he is not prejudiced against other tenants or arrangements of our borders. He observes—

"Any unbiassed mind will, however, admit that 'bedding-out' was a step, and a long one, in the way of progress, and that it still continues to advance in that path in the hands of those who understand its value best, and keep its proper aims in view, notwithstanding loud asseverations to the contrary from many quarters. It is undeniable that it is the most artistic style of garden embellishment that we can practise in our climate; and that, had its adoption been limited in every case by considerations of fitness and harmony with contingent circumstances, we should have had little reason to complain of the vulgarity and sameness and deprivations that a too inconsiderate practice of it has entailed.

"Experience has, however, taught many that the exclusive adoption of 'bedding-out' in their case was a mistake; that it was never adapted to either their requirements, means, or tastes; and that along with its adoption came a limitation of enjoyments. Many have come to see that a fashion in flower gardening, unless it is expansive, and adapted to gratify the craving for flowers at all times which is inherent in every mind, is an error, and ought to be curtailed."

There is no doubt that herbaceous plants may be employed in the massing of flowers, and Mr. Sutherland annotates wisely on this and on their adaptability to spring flower gardening and in mixed flower borders. He enters fully into the modes of propagation and culture, and concludes with a systematically arranged descriptive list of the species, and a copious alphabetical index. In one of his sections he says—

"Harmony of colour and harmony of form, and agreeable contrasts of both, are of equal importance in mixed planting as in massing. An outrage of the one or the other may be more easily discernible in the latter style than in the former, but if often repeated it will have the same bad effect, although the cause may not be always easily defined."

He offers some good advice upon this point, but a still fuller assistance will be obtained from the next volume we are about to mention, and we recommend our readers to purchase both.

Manual of the Science of Colour, &c., with Coloured Frontispiece and other Illustrations. By W. Benson, &c. Chapman and Hall, London.

One extract will show the practical use of its contents, but it enters fully into the science of the subject, although a small volume.

"Rule VIII.—*Gradations, Contrasts, and Single Colours should correspond.*—There should be a correspondence or equivalence between the gradations and contrasts which occur in the different parts of the composition. If there is only one colour which is striking for its depth or clearness, that colour should occupy the middle parts to which the eye is naturally mainly directed, so that it may form balancing gradations and contrasts with all the less striking colours around it; or else it should surround the less striking colours as a background to them, so as to form the like gradations and contrasts with the less striking colours towards the middle. At any rate it should be disposed so as to secure in some way or other a certain symmetry of colours in the different parts of the composition.

"The advantage of this may be easily seen by comparing the effect of a composition in which this rule is attended to with that of another of the same colours with which it is disregarded.

"Again, if there are two or more striking colours, they should be disposed so as to balance each other across or around the central parts of the composition, either by one or both of the colours being repeated on each side of the middle, or by one being on one side, and the other on the other.

"Landscapes, where the clear colours on the sky are reflected from water in the foreground, afford approximate examples on the former variety; while landscapes, where those clear colours are matched by the deep reds, greens, or other hues, and dark shades of the foreground, do the same for the latter."

NOTES AND GLEANINGS.

Testimonial to Mr. W. Thomson.—In our advertisement columns to-day will be seen an announcement of a movement to demonstrate how much appreciated is one of the best of gardeners, and of truly worthy men. He fully deserves it.

—— Plant Aids Against Small-pox.—At a time when the small-pox is so prevalent, and vaccination has become, so to speak, fashionable, it is surprising that we do not hear something of the many reputed remedies of foreign countries, either as a cure for this disease or as an eradicator of its effects. The Sarracenia purpurea is well known for its supposed efficacy, and it was even introduced into this country some few years back. But a plant not so well known in Europe is the Melia Azadirachta, L., of India, the leaves of which are used by the natives to cover the bodies of patients recovering from small-pox, as they are supposed to prevent the mark becoming permanent. Dr. Wright says of this tree that "the leaves beaten into a pulp, and externally applied, act like a charm in removing the most intractable form of Psora and other pustular eruptions."—(*Nature.*)

—— Uses of Sawdust.—The sawdust of various woods is now turned to good purpose. That of box wood is used for cleaning jewellery, whilst mahogany sawdust is employed for smoking fish. Birch and rosewood sawdust is used by furriers in cleansing furs. In Paris, common sawdust is very ingeniously utilised. A method has been discovered of forcing the material into solid moulds by the aid of heat and the hydraulic press. The sawdust thus pressed is said to present a brilliant surface which possesses great durability. Logwood chips, as is well known, are used by the manufacturers of fine fruity British port wine, 1 lb. of logwood chips going to twenty-six gallons of cider, together with Elderberry juice and other horrors.—(*Builder.*)

WORK FOR THE WEEK.

KITCHEN GARDEN.

As the time for sowing the principal crops of winter and spring *Broccoli* and *Greens* has arrived, select, if possible, an open piece of ground rather poor than rich, let the seed be sown thinly, and when the plants are large enough to handle, prick them out in similar soil. A crop of *Globe Artichokes* should now be planted for producing a late supply. The side shoots should be taken from old stools, and planted in lines 4 feet apart and 18 inches between the plants, or trenches may be dug 18 inches wide and the same in depth, and some well-decomposed manure should be dug into them, and the plants put out as above. Seedlings of *Cauliflowers, Cabbages, &c.*, raised this spring should be pricked off when large enough, to get stocky for final transplanting. Sowing the main crop of *Carrots* should no longer be delayed if the ground is in good order. Continue to make periodical sowings of the different culinary vegetables of which a successional supply is required. *Spinach* should be sown once a-fortnight, and *Peas, Beans,* and *Turnips* once in three weeks. Sowings of all *Salads* should be made with strict regularity, and proper attention should be paid to protecting all kinds of seeds from the ravages of birds and insects. In sowing *Peas,* it is the most workmanlike method to put the stakes to them at once, as by so doing the barren appearance of the ground is removed, and no more trampling on it is necessary for a long time; besides, they afford a slight shelter to the young plants on their first appearance above ground. If the crops of *Onions, Leeks, Parsnips, Beet, Salsafy,* and *Scorzonera* are not yet sown, doing so should be no longer delayed. A sowing of tall *Kidney Beans* may now be made in early localities; the early sowing of this useful vegetable is frequently cut off by late spring frosts, but when this happens the ground should be left undisturbed, as that part of the plant beneath the surface of the soil generally throws up shoots from which a crop will be produced nearly as soon as if the leaders had remained uninjured.

FLOWER GARDEN.

Look well to recently-transplanted trees and shrubs. Do not allow anything to suffer from want of water at the roots, but one good soaking after planting to settle the soil will be sufficient in most cases until we have more sunshine. The soil should be kept moist but not saturated or run together by overwatering them at the root. Patches of some of the more showy of the hardy annuals should now be sown in the vacant places which usually exist in the herbaceous beds, and at the edges of clumps and borders in the shrubbery. Among the many kinds adapted for this purpose, I may mention the following:—Double Poppies of various colours, Lupines, Sunflowers, African and French Marigolds, Godetias, Eryeimum, Clarkia, Gilia, Collinsia, Silene, Eschscholtzia, Nemophila, Nolana, Kaulfussia, &c., not forgetting the old favourite Mignonette. A sufficient quantity of cuttings and seedlings of half-hardy climbers should now be potted for planting out in May. With such plants as Cobœas, Maurandyas, Lophospermums, Calampelis, Loasas, and Tropœolum canariense many bare places on the walls and trellises which otherwise would be blemishes on the general appearance of the place, may be covered and made ornamental. Violets are everybody's flowers, and to have them fine and in abundance they require and will merit some share of attention, particularly where they do not naturally succeed well.

In some situations they grow so strongly and flower so abundantly that they merely require at this season to be taken up, parted, and replanted, and if kept free from weeds all will go well; while in other places they frequently cause more trouble than a collection of Auriculas or Polyanthuses. A frame on the north side of a wall is the most likely situation for preventing the attacks of red spider to which they are very liable, and which cause them to lose their foliage during the winter. About the beginning of September they should be planted in a frame upon a spent Melon or Cucumber bed, where they will have time to become well established before winter, and if frost is excluded and plenty of air given at all times, perfect success may be expected.

GREENHOUSE AND CONSERVATORY.

Where hardy shrubs are annually forced select the most suitable when removed from the houses, and give them some kind of temporary shelter to gradually harden their foliage. Those cramped for pot room shift into large pots, using rich turfy loam; towards the end of the month plunge them in an open situation in order that the wood may ripen early. From having been previously forced these will bloom earlier than new stock, of which a portion should every year be potted to replace plants become useless for further work. After they have done flowering, cut down and place in a cold frame the most choice kinds of Cinerarias in order to produce suckers, and put in a stock of Chrysanthemum cuttings for autumn display. As spring-flowering plants for the stove and for cutting I know of none more useful than Begonias. Now will be a good time to begin with a stock for next season's display. As they go out of bloom allow them a short rest in a rather dry house, where they may be partially disrooted and repotted, pruning in any straggling shoots. Keep them close and syringe frequently, when they will soon commence growing. Abundance of light and a tolerable share of pot room are necessary to insure fine plants. As the plants advance liquid manure may now and then be given. Keep specimen plants in beds or borders properly supplied with water at the roots, and see that everything is clear of green fly and other insects. Heaths and other hard-wooded greenhouse plants should be potted as they require it. Generally speaking, the most suitable time is after they have done flowering and commenced a new growth, but the operation may be performed with propriety at any season when the roots are making progress without being induced to do so by unnatural excitement. Before potting take care that the old ball is sufficiently moist, for if it is potted in a dry state it will be impossible afterwards to moisten it properly without souring and saturating the new soil. The Epacris family is now so numerous, so beautiful, and so valuable for winter flowering, that for country establishments they outrival Heaths. Let them have all possible attention in repotting, and let them be kept rather close and moist until they have commenced fresh growth. As soon as the flowering is over the future shape of the plants should be adjusted by removing a portion of the old flowering stems, that their energy may be devoted solely to the growth of the plant. Let climbers both in pots and borders have due attention with regard to training, and retain no more shoots than the allotted space will afford room for. A succession of Achimenes intended to flower late in the autumn should now be placed in heat and treated according to the directions given in former calendars. Some of those of former successions may be potted in suspended baskets, for which A. longiflora and cupreata are particularly adapted. Pans or broad shallow pots are preferable for their general cultivation, and, as they require an abundant supply of moisture when they are in flower, let the drainage be very perfect, that they may be freely watered without stagnating the soil. Besides the permanent plants in the conservatory, many choice plants in pots will be required to keep up a succession of gay flowers throughout the summer. Among the finest for this purpose are Brugmansias, Erythrina Crista-galli, Thunbergia, Stephanotis, Mandevilla suaveolens, Allamanda, Echites, Achimenes, Ipomæas, with Heaths and Pelargoniums. Let these have all possible attention, and bring them forward in several lots, so that one set may succeed another. Pay particular attention to the Liliums now in pots by giving them a liberal supply of water and by neatly staking them. A top-dressing of turfy peat, sand, and well-decomposed cow manure will be of great benefit to them, and they will be very useful for conservatory or drawing-room decoration late in the autumn. Let Fuchsias, which are very useful for summer and autumn flowering in the conservatory, be repotted as they may require in rich compost, watering them occasionally with liquid manure. Nearly all the varieties have a tendency to form conical bushes, and by a very little attention they may be guided into this appropriate form. One strong shoot should be selected to form a leader, and should be trained perfectly upright, the remaining shoots being regulated by stopping any which are growing more luxuriantly than is consistent with the proper shape of the plant.

PITS AND FRAMES.

Lose no time in potting off or pricking out into frames or boxes young cuttings as soon as they are sufficiently rooted, and seedlings as soon as they will bear handling. As the potted-off plants become established with new roots they should be gradually inured to the open air. The hardier kinds, if in pots, may be set upon a bed of coal ashes, or plunged in the open air and protected at night by hoops and mats. If plunged in old tan, ashes, or other light material, much of the labour of watering will be saved, and the plants will be in a better state when the planting-out season arrives; but the most economical plan is to plant them out in frames, and at the proper season to remove them to the beds with balls.—W. Keane.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

Another fine week for out-door work. Planted more Potatoes, the ground being in excellent order, and sowed more Peas and Beans. We have to calculate this to a general nicety. We seldom can sow borders or quarters at a time, but must be satisfied with a few rows, so as to have a succession, though a small one. We have frequently alluded to the common practice of expecting so much from an acre or two of kitchen garden, even when the land round it brings in a very small sum as rent. Without liming, &c., ground that never has a chance to rest a little becomes next to inert, and will not produce as when fresher. However, rotten dung and a little lime do wonders.

Our first Potatoes in pots are very fair, but smaller than usual, which we attribute to the fact of having to move them frequently; however, ripe tubers, clean and sweet, at the end of March, look almost as well as if they were larger.

Cauliflowers and Cabbages.—With the exception of the Cauliflowers under hand-lights, which, from being covered in the severe weather, have done well, we saved ultimately few others, even when they received a little protection; very few Cabbages were left to us, and of the Coleworts on a north bank, though they stood, yet we fear a good many will run to seed. We have a nice lot of strong stubby Cauliflowers and Cabbages that were raised on a slight hotbed, pricked out, and then hardened off by degrees; but well as they look, we expect we must wait some weeks for hearted young Cabbages. We have put a cordon of ashes and lime round the rows to keep intruders at bay. We find that wood pigeons are interfering with our Peas, nibbling off the tops. We would like to know what will keep them away if there is to be no noise from a gun.

We mentioned the other week some seeds of Peas and Beans being disturbed by rats or mice, though red-leaded. That, however, is the only case. All sown before and since are thoroughly unmolested. Some years ago we had no chance with Peas, unless they were securely netted until they were a foot in height, or we planted them out when fully 6 inches high. Thanks to the red-leading, we have been saved the annoyance of raising and transplanting. Even pheasants, which used to clear-out the rows, fight shy of touching the tops, partridges the same; but wood pigeons are not so particular, as we have started a bevy of them from the Peas at early morn. When staked, as they will be presently, the wood pigeons will not get so easy access to the top, and they are rather afraid and suspicious of the stakes.

Hotbeds.—These are sometimes rather uncertain in cold weather. We lately stated that beds put up for Cucumbers did not heat as we expected, but when the weather became close, muggy, and warm they heated rather too violently, and we had to take corresponding measures. In all such beds intended for Melons and Cucumbers it is well to have the heat well up and regular before the soil is added. The soil then is soon heated, and the plants when turned out will push along at once. To save all future trouble and checks from moving and exposure, we prefer giving the necessary amount of soil at once.

We used to have a sort of pitched battle every year here between the rough dung frame and the hot-water pit as respects early spring Cucumbers, and generally for a long succession of years there was little to choose between them. This year,

owing to the beds not heating kindly, partly owing to a lot of leaves merely beginning to heat being placed at the bottom instead of the top, there will be no contest nor comparison, as those in the small pit heated by hot water, and planted in pots plunged overhead in a small bed, have yielded profusely, and if we be not careful will hurt themselves with excessive fertility. After many years' experience we have never found any plan to excel that lately described for obtaining a great number of Cucumbers in little room.

FRUIT GARDEN.

For large establishments there has nothing appeared of late so interesting and instructive as the articlee by Mr. Robson on table decoration. Still, we consider that there is much force in what is stated by Mr. Giddings in page 238 as to making the most of limited means. This can hardly be taught by precept, but the managers of large places have but a faint idea of the work, the changing and shifting, and the constant care required to make the most of every foot of glass at all seasons of the year, and where even forcing and fruit houses must turn out ever so many borrowed crops, as it were, of different things. Many a man may wish and sigh in vain for a place for everything, and everything in its place, when he finds he must have so many temporary crops in one place, and still the main point be kept in view. We believe with more resources as to room, much labour and time would be saved. Few employers have any idea of the labour involved in succession crops of Beans, Strawberries, &c., in Peach houses and vineries, not to speak of myriads of bedding plants before much heat is applied.

Now even as respects *Strawberries*, we have often wished for a house to grow them only for early crops. In other houses they succeed as borrowed crops, chiefly in proportion to the light and air given to them. In such houses the borrowed crops of Strawberries have often in value paid all the expenses of fuel and management for Peaches and Grapes. Where many plants besides the Strawberries are grown in such houses, there is apt to be too much humidity for the swelling and ripening of the fruit. When once a roof is nearly covered with foliage, Strawberries will do little good under it. There is also a drawback where there is rather too much moisture. Our Peach house is the best place we have for a free setting of early Strawberries, and hence when swelling freely we remove them to other places. We took a lot to the front shelf of a vinery, where they swelled fast, though we would rather avoid the moving if we could. But here, owing to the stage and floor being filled with plants that rather liked subdued light, the necessary moisture to them was too much for the swelling and ripening fruit. Morning after morning as we passed along we had to pick off several fine fruit beginning to show signs of ripening because of damping off; and as we could not afford this we had the plants removed to a temporary stage in a brick pit, where they could have drier heat as well as a freer current of air. In such a pit, before some Vines required the space, a lot of our old favourite Black Prince Strawberry did excellent service, producing good-sized fruit freely and in succession. This early kind is impatient of much heat. It does best when the artificial heat is little above 55° until the fruit begins to colour.

In all places heated by hot water where Strawberries are grown, it is well to smear the pipes with flowers of sulphur. mixed with a little soft-soap water it will adhere all the better. If there is a shelf near the back wall, the wall may also be well sulphured to keep red spider away.

ORNAMENTAL DEPARTMENT.

Proceeded with work out of doors as previously detailed, and with cleaning, potting, pricking off, and cutting-making. Many tender plants, as Coleus and Iresine, may still be struck in time for having fine plants by the end of May.

Those who intend doing much with hardy annuals should sow now without delay. In general they will come up at once, and do better than those sown earlier, and, except in the case of the very hardiest, will bloom as soon. For regular beds it is best to sow in rows or rings, not too deeply, and thin when up. When the seeds are sown in patches, it is a good plan to cover with pots until the seedlings are fairly up, and then to expose them by degrees. For symmetrical beds that cannot well be sown now, seeds may be sown in rows in a little bed in rich compost, and then be lifted in patches, and transplanted at once at the requisite distances. Now is a good time to sow Stocks, Asters, Zinnias, and half-hardy annuals in general in a mild hotbed. They generally do better than if sown a month earlier, unless there be plenty of room and convenience for pricking them out and keeping them in a growing temperature. Checks are great drawbacks to their doing well afterwards.—R. F.

TRADE CATALOGUE RECEIVED.

Downie, Laird, & Laing, Stanstead Park, Forest Hill, London, S.E., and 17, South Frederick Street, Edinburgh.—*Descriptive Catalogue of Florists' Flowers, &c.*

TO CORRESPONDENTS.

N.B.—Many questions must remain unanswered until next week.

Making Asphalt Walks (*E. S.*).—It is best done in dry weather, but you may asphalt them at this time of year during dry days. It is well to have a good bottom of rubble, and then cover with 3 inches of asphalt, formed by pouring boiling coal tar over cinders, bringing the whole to the consistency of mortar, and when this is spread on the walks and stiffens a little, sprinkle with gravel—spar is best—and when it will bear the roller, roll it firmly. Coal tar answers quite as well as pitch, and may be had at a cheap rate from gasworks. At some it is given away.

Flounder Potato (*A. D. C.*).—We have known the Fluke sold under that name, evidently because of its flat form. For a damp climate we should prefer the earliest-ripening varieties.

Who is an Amateur? (*J. Poole*).—It is as impossible for us to say what "the Horticultural Society's definition of an amateur" would be as it was for a former Chief Justice to extract from witnesses a concordant answer to "Who is a gentleman?" Our definition of an amateur gardener is—one who cultivates, or has cultivated for him, a garden for his own use and pleasure. He may sell that garden's surplus produce, and yet be an amateur, for gardening is neither his profession nor livelihood.

Seedling Fuchsia (*J. Garnett*).—The flower of the Fuchsia enclosed to us having petaloid anthers, is not very uncommon, having noticed the same in casual blossoms many years ago, and occasionally since; but even if constant in its feature throughout the year, eminent florists think it would not become popular.

Conifer Seeds.—In reply to "Vicar," "A. B. C." has procured seeds of various Coniferæ from Haage and Schmidt, of Erfurt, in Prussia. Macintosh, seedsman at Hammersmith, advertised himself this year as the agent of another Erfurt firm, which also supplies tree seeds. Seeds of the Deodar may be had direct from Simla. "A. B. C." forgets the name of the commission agents there who supply them; but any Indian in the habit of spending the hot season there, will know the name of one. Deodar seeds are only ripened once in two years as a rule. They can therefore be the better relied on when obtained direct from Simla. They are only supplied there fresh after the harvest.

Chinese Arbor-Vitæ Hedge Cutting (*H. B. M.*).—The best time for cutting it is before growth commences, but it will be well to defer it until milder weather than we have lately experienced, or say about the middle of April You may cut it back to any extent, both at the top and sides, and it will push freely. It makes a capital screen, but is not strong enough for a fence.

Vines for a Cool Vinery (*C. R.*).—You cannot without fire heat in a vinery grow successfully Lady Downe's, Alicante, Grizzly Frontignan, and Mill Hill Hamburgh, except in an unusually warm season. They all require fire heat, and are good kinds. We have no experience of applying sulphate of iron to Peach trees, and have no faith in its application.

Vines on Hardy Stocks (*R. S. S.*).—Some kinds may be had grafted on hardy stocks, but, as a rule, it is little practised by nurserymen, and we do not know of any nurseryman carrying on the practice. They ought to advertise. Water from barrels coated inside with tar will not be suitable for watering plants either in pots or borders. It is injurious. The barrels should be emptied, dried, and fired inside with a bundle of straw, by which means the tar will be burnt off, and the wood charred, rendering it more durable.

Picotee Seed Sowing (*G.*).—You may now sow the seed in pans of light rich soil, and place them in a gentle hotbed, and when the young plants are well above ground remove them to a cold frame; when large enough to handle prick them out in a bed in the open ground, and in autumn you may take them up and pot, wintering them in a cold frame. They will not flower until the following summer, and we question their value for flowering at Christmas, or, indeed, being of any use for forcing. They and Carnations, to be of value for winter, require to be of the Perpetual class, and require to be grown specially for the purpose, being kept pinched back early in summer—in fact, kept from flowering, and the growth should be made early in summer so as to induce autumn and winter flowering. Early-layered Carnations are of no use for forcing but Pinks answer well.

Cydonia japonica Pruning (*An Old Subscriber*).—We should be unwilling to interfere in any way with the plant's future flowering, and we fear such will be the case if you cut-in the spurs 9 inches in length, as we should, to within an inch or two of their base. The young shoots you may shorten back to within an inch of their base, and they will form spurs, or you may cause them to do so by pinching-out the points of the shoots from them at the third leaf. The pruning should be performed as soon as the flowering is past. Keep the shoots well stopped during the summer—in fact, treat it as you would a close-pinched pyramid Pear tree on the Quince.

Gardenia Culture (*C. M.*).—G. florida will do tolerably well in a warm greenhouse, but to succeed well requires to be grown in the coolest and most airy position in a stove. G. radicans requires a stove. We can only account for the plants' not flowering from the circumstance of their being grown in a cool house, and, therefore, not perfecting their growths. The plants are very free-flowering; we have them in full bud now, though only a few inches high. They will flower this month, and they may be had in bloom in May by placing them in a greenhouse. The plants require to be potted after flowering in a compost of two parts fibrous loam, one part sandy peat, and a free admixture of sharp sand. Encourage growth by a free use of the syringe, and maintaining a moist atmosphere, and, if it can be given, a mild bottom heat. Water freely, especially when growing and flowering, and at no time should the soil become dry. We have grown them very successfully by placing them in a hotbed in March for a short time to start them into growth and flower,

and then setting them in a vinery to complete the growth, continuing them in a house at a temperature of from 40° to 45° from fire heat in winter. They are the better, however, of a cool stove temperature at all times.

Cyclamen hederæfolium Culture (*T. W.*).—We conclude your plant is C. repandum (C. hederæfolium of some). It flowers in April, producing bright red flowers, or it may be C. neapolitanum, also C. hederæfolium of some, which has bright rosy pink flowers in September. The corms of the former, and, indeed, all Cyclamens out of doors, should have a covering of not less than 1½ inch in thickness, and we give ours a top-dressing of partially decayed leaves. We find the following do well on the slightly elevated parts of rockwork, shaded from the direct midday rays of the sun, east aspects being most suitable, though they do well in the west—C. coum, bright red, flowering in February and March; C. europæum, red, flowering at the end of summer, and fragrant; C. neapolitanum, rosy pink, September; C. repandum, April; and C. vernum, red, like C. coum, but with a slightly marbled leaf. Of these C. neapolitanum is the most free-growing, doing well in not very shaded woods, particularly on their margins, where there is a deposit of vegetable matter. We have seen corms nearly 6 inches in diameter producing hundreds of flowers. Such plants as these by walks in woods are as much gems in autumn as Primroses are in spring. It is remarkable they are not more extensively planted. The ground must be free of stagnant water.

List of Roses (*A Cottage Gardener*).—All the Roses in the list are Hybrid Perpetuals, except Charles Lawson, which is a Hybrid Bourbon, and one of the finest summer Roses grown. We do not know John Grier or Duc d'Anjou; all the rest are rightly spelt except Duchesse de Medina-Cœli and Madame Charles Crapelet.

Pruning Ivy (*W. W. M.*).—There are two sides to most questions, and yours relative to the Ivy is not an exception. The advantage of cutting in pretty closely now Ivy on a wall is, that the Ivy is kept near the wall, and you will have a mantle of beautiful fresh green in a few weeks. The disadvantage is, that for a short time the Ivy will look rather bare and stunted. Where this would be a drawback, we would shorten-back for one season. But where there is not a pretty close trimming, the Ivy in time would get too heavy and come too far from the wall. We should prune now.

Edging for Yellow Calceolaria Bed (*J. W.*).—If there is room we would prefer a narrow fringe of Cerastium, and then Purple King Verbena in front of the Calceolaria. Good plants of Lobelia would do equally well. A fine edging would be formed of Iresine Lindeni kept low.

Heating a Pit by a Flue (*A Subscriber*).—There can be no question as to heating such a pit by a flue. For a small place like it, we would have the flue all round, and place it on the floor of the pit, sinking the stokehole all that more, so that the fire-bars of the small fireplace should be 18 inches beneath the level of the bottom of the flue. If you studied economy in materials, the present front wall and back wall might form the outer sides of the flue. You would not obtain so much heat as if the flue stood detached. For 2 feet from the furnace we would make the flue of brick-on-bed, all the rest we would make of two bricks on-edge, and just so wide as to be covered with a 9-inch tile, or even a brick laid across. If you have the means we consider that a chamber a foot or so over the flue would be best. The cheapest mode we have ever tried was using rough slabs of wood to go across, and then filling-in the rather open spaces between them with brickbats and very rough mortar. These allowed the heat to rise pretty freely. Where slate or stone cannot be used for chambering, we would, however, dispense with the chamber, and as you propose, fill-up the space with clinkers, brickbats, &c. We once had a pit that did such service as never was beaten with hot water or any other mode of heating. In this case the flue, instead of being close to the sides, was fully 18 inches from the sides, back and front. That space back and front, as well as the space between the flues, was filled-up with bats and clinkers in as loose a state as possible, so as to form in reality a chamber. On this rough rubble, a little above the level of the flue, at back and front in the centre of each light we set an upright drain-pipe of 4 inches in diameter, the lower end resting on a common house-slate, but raised above it half an inch by three pieces of tile placed beneath it. The object of this was not merely to let the heat up, but by pouring water down to set that water spreading over the stones near the flue without ever drenching the flue itself. With a wooden plug in these pipes any top heat or moist heat could be had at will. Over the bottom of these pipes and the top of the flues more open rubble was placed, finishing with a layer of clean-washed small gravel as the bottom of the bed of earth, small enough on the top to permit the earth being taken clean away without disturbing the bed. As your pit is divided by a brick wall, you might have a moist atmosphere in one division for Cucumbers, a moist atmosphere also in the division for Melons when growing, and a dry atmosphere to give them flavour when ripening. If you can contrive openings at the end for cleaning the flue, we would prefer the flue, if small, to go all round, as thus less heat would be lost. If you cannot well do so, we should be satisfied with a 14-inch flue along the middle of the pit. We have seen splendid crops of Cucumbers with flue heat. If you had a little house, say 10 feet in width and a rather steep roof, so that you could walk inside, then we would say have a strong flue round the house, shut in the front by a wall, make a clinker bed as above below the soil, and leave the back flue exposed for top heat.

Annuals for Flower Beds (*A. C.*).—Annuals will do very well in such beds if you take the trouble to pick off the seed-pods. The following would look well, and a penny or twopence worth of each would do. For the large centre bed or border:—Centre with Prince's Feather, a ring round of Lovelies-bleeding, a ring round of Erysimum Perofiskianum, then Clarkia pulchella, and finished with Clarkia pulchella alba. The two side beds would look well filled with Saponaria calabrica, and Silene pendula, or Silene pendula in the middle, and an edging of blue Nemophila, sowing rather thinly, and sowing again at the end of June. For a lower bed in the centre you might have the Erysimum mentioned above—that stands well, then Clarkia pulchella, Clarkia pulchella alba, finishing with Silene ruberrima. These may be sown among the bulbs now, and the bulbs will suffer little from being left in the ground, but you will make a better job and more regular beds by allowing the bulbs to ripen, or taking them up carefully so as to ripen elsewhere, and sowing at once. If you allow the bulbs to ripen in the beds, then fix on a piece of ground, make it rather rich for 2 or 3 inches on the surface, cover with a little fine soil, and sow the seeds thickly in little drills; then when the beds are empty and all ready, lift the little plants with a trowel in little patches, and plant these little patches regularly in your beds. You may turf now, but hardly with safety, unless the turf be taken up pretty thick and you place it in a tub of water to soak before laying it down. If you cannot do this, you had better defer turfing until the autumn.

Compost for Geraniums, &c. (*A Subscriber*).—Geraniums succeed well in a compost of two parts light loam from rotted turf, one part leaf soil, or one part of thoroughly decayed dung, with a free admixture of sand. The compost for Cinerarias may consist of two parts light fibrous loam, one part leaf soil, half a part each of sandy peat and old hotbed manure, and one-sixth of silver sand. For Fuchsias use three parts loam and one part each of old cow dung and leaf soil, with a free admixture of sharp sand; for Balsams, two parts light loam and one part old hotbed manure; for Primulas, two parts fibrous light loam, one part leaf soil, half a part of old cow dung, one part of sandy peat, and half a part of silver sand. The whole of the materials should be well mixed, and the loam chopped fine but not sifted. As regards the propagating house, write to some of the horticultural builders who advertise in this Journal, stating what you require, and asking for an estimate.

Eucharis amazonica to Flower Four Times in a Season (*A Lady in Cheshire*).—We know some who flower this plant by placing it for a time in bottom heat until it makes a good growth, and then remove it for about six weeks to a drier and cooler place, and afterwards re-introduce it to bottom heat and a moist atmosphere. This is said to cause it to flower as required. We have no experience, however, of that practice, and anyone having successfully flowered it four times in a season would oblige us by particulars of treatment.

Queen Anne's Pocket Melon (*W. W.*).—It may be had through any of the seedsmen who advertise in our columns.

Thyrsacanthus rutilans for December (*Idem*).—The cuttings you insert in a few days will no doubt form plants which will flower in December, but these will not be fine. You will, of course, place the cuttings in bottom heat, and when struck transfer them to larger pots as soon as the roots in the cutting pots reach the sides, again place the plants in bottom heat, and continue them in it until they are rooting freely, then withdraw them by degrees, and remove them to a late vinery or other house where there is a brisk heat and moist atmosphere, and by August they will need their final shift, which will be determinable by the size and condition of the plants. Large shifts are not to be commended. In September afford a light, airy position in a warm house, giving no more water than enough to keep the foliage fresh. In October they should be placed in a house with a temperature of from 60° to 65° at night, and from 70° to 75° by day; and if bottom heat be at command, plunge the pots, and the plants may flower at the time you require. Old plants would serve you better, and flower under ordinary treatment in a stove at the time you name.

Rhododendron Flower Buds Injured (*W. H.*).—The bud enclosed to us is eaten by the larva of some insect, but what we cannot determine in the absence of a specimen. The bud sent was not destroyed. It would have flowered had the damage proceeded no further.

Beta braziliensis Treatment (*H. C.*).—We should prick off the plants just coming up, as soon as they are large enough to handle, into other pans about an inch apart, and continue them in a frame with a gentle heat until they have recovered from the removal, and then plant them out in the open ground in May after being well hardened off in a cold frame. They should have deep rich soil and an open situation. On their full-leaf development depends their effect. Good ordinary garden soil answers well.

Seedling Cineraria (*E. P. Y.*).—The flower is large and showy, but is altogether defective as a florists' flower.

Sutton's Red-skinned Flourball—President Lincoln Potato (*G. G.*).—We do not know the American variety you name. We sent your inquiry to Mr. Fenn, and he replies:—"I can perceive no difference between Sutton's Red-skinned Flourball and the American Red Potato. Whether one or the other is sailing under the synonymy of President Lincoln I cannot say, further than that it is very likely to be the case; but this I do know, if the renaming of the American Red goes on as it has begun, it bids fair soon to outdo, in the matter of aliases, our old English "Grammar," and that will tend to confusion worse confounded. I believe there is a Potato called President Lincoln, and I trust it is better than any of those American sorts which I have proved, more worthy than them to commemorate the name of so great a benefactor of his species."

Grafting with Weeping Ash (*A Novice in Gardening*).—The main point is to procure some nice common Ash stocks with clean stems, and of the required height (9 to 12 feet), and stout, so as to stand without support. Take the scions from the Weeping Ash, the moderately strong growths of last year before they begin to swell the buds, and insert their ends in damp soil in a shady place. When the buds of the stock begin to swell, cut off the head down to where you wish to graft, choosing a smooth part of the bark, and put on the scion there in the same way as you would an Apple or Pear, tying and claying in the same way. Whip grafting is perhaps the most eligible method. You will find full particulars respecting grafting in the "Science and Practice of Gardening," which may be had free by post from our office if you send 3*s.* 3½*d.* with your address.

Red-leading Peas (*Idem*).—Steeping the Peas in train oil and sulphur not proving effectual, we advise you to try red lead. Moisten the Peas thoroughly with water, dust over them red lead, and then stir them with a piece of wood until every Pea is covered with red lead. We put in about three pinches of red lead to a quart of Peas, a pinch being as much as can be lifted between the finger and thumb. It does not in any way interfere with the growth of the Peas.

Otaheite Orange infested with Scale (*F. E. P.*).—The brown spots on the leaf sent are the Orange Scale (Coccus), and their secretions are the honeydew you speak of, which in time is possessed by a black fungus. If you remove the scale, the honeydew and black mould or fungus will disappear. Pick off the brown spots whilst young or soft with the point of a knife, and wash the leaves on both sides with a solution of soft soap, 2 ozs. to the gallon, as hot as the hand can bear, dropping into the solution about twenty drops of spirits of turpentine.

Puzzling Ants (*Q.*).—If the fruit trees in your orchard house are in pots, set them on bricks in saucers full of water. If not in pots, have small vessels of water, say formed of zinc, an inch wide and an inch deep, to set round the plant. A little wadding, the outside dipped in oil and soft soap, and tied on the stem, will prevent them rising. If on a wall outside, the best plan is to syringe the wall well with a clear solution of lime and soot

water, beginning at the top and washing down, going over the wall a second time, and then painting the bottom of the wall with a cordon, say 3 inches wide, of tar and oil. Strong lime water and guano make them go off with us.

POULTRY, BEE, AND PIGEON CHRONICLE.

WHAT ARE THE USES OF POULTRY SHOWS?

There is no doubt whatever that good, poultry shows have done for the breeds of fowls in general—that is, as far as concerns their economic value, they are practically of little use. They encourage the various breeds to excel in the apparently useful qualities peculiar to each; but it is in the paying so much attention to these very points that the fowl itself becomes deteriorated. Of course, I am speaking of the prize fowl, the upper ten thousand of the feathered race. I do not deny that shows have some advantage, for they do keep up races descended from ancestors of real usefulness, so that by crossing with birds of lower pedigree or different variety, the good qualities may be regained.

This deterioration is occasioned partly by the judges and partly by the prize-devouring exhibitor.

The judge, perhaps, sees certain points that want developing; he lays stress on, and unduly encourages them, till he, perhaps, gets beyond what he originally expected to be attained, and at the expense of other properties. To supply the demand for the prize fowl, the ardent or covetous fancier rears a fowl for the judge, and all minor considerations are laid aside.

The lordly Dorking may only rear half its brood, it may scorn the noble art of laying, and die in great honour with a bumble foot; but if it has only won a silver cup that is enough. The haughty (exhibition) Game fowl stalks about in most brilliant attire on legs admirably adapted for running away, propagates a roupy but prize-winning set of chickens, goes the round of a number of shows with great success perhaps, in intervals of health, and dies at last of some mysterious disorder.

Dare I couple the Brahma with these typical exhibition fowls? when its enthusiastic patrons tell us "here we have a fowl fit for exhibition and everything else we can desire; it is large, handsome, amiable, contented and industrious, hardy and prolific, delicious eating, if eaten at exactly the proper time of its existence" (which is hard to hit on)—fowls, they say, that come home victoriously from a fatiguing show only to lay admirable eggs with redoubled energy, and to rear in an exemplary manner chickens, which make up for going about utterly destitute of feathers in an early part of their existence, by wearing a superabundance where they are of no earthly use in after life.

The Brahma, however, being a new and still improving variety, has not arrived yet at a standstill, for in many of the breeds, both in fowls and Ducks, the limit of weight seems to have been attained, and in the feather varieties where weight is not of such importance, constitution is lost by in-breeding, while the Game fowl is no longer that hardy, compact bird with fighting qualities, and constitution which also made it useful as a farmyard fowl, but is bred like a cage bird. So that my opinion is, that poultry shows, beyond being a means of gratifying a pleasant hobby, are of no real value in encouraging the breeding of poultry in its development as a source of food for the nation at large.—Charybdis.

[We read the foregoing to a well-known poultry exhibitor, and he exclaimed, "You surely wo'n't publish that!" and he put on his hat and departed when we replied that we should place it first in the "Poultry Chronicle." There is much truth, but not the whole truth among "Charybdis's" clever sarcasms, and the whole truth, had he told it, would have been the Scylla to those sarcasms.

> "Errors like straws upon the surface flow,
> He that would search for pearls must dive below."

It is quite true that many of the finest Brahmas and Cochins are vulture-hocked; many noble Game fowls have legs not agreeing in colour with the plumage; many pure Dorkings having diverse combs in a pen; many good Hamburghs having hen tails, have been on account of those trivial peculiarities disqualified by judges, and rightly disqualified, because certain rules are laid down declaring all those peculiarities defects. As a matter of taste we admire vulture-hocked Brahmas, and the other disqualifications are trivial—but what then? Certain characteristics must be rendered peremptory, or the breeder for exhibition and the judge would be more eccentric even than they occasionally are. But let us "dive below" and seek for an answer to this query—Since poultry shows have largely extended, is not the supply of eggs and market fowls largely increased?—Eds.]

MY POULTRY BALANCE SHEET FOR 1870.

Poultry is my hobby, and I make it pay. I am sure others may do so, and in many cases poultry-keeping may make a very nice little addition to the yearly income. Let everyone praise the bridge that carries him over the river. I find it pays me, and I am not ashamed to say so—nay, on the contrary, by doing so I hope to lead others to become poultry-keepers, as my experience has led me to the conclusion that anyone with attention and a nice grass run can make a very useful addition to his income, if limited; if not, there are others who have plenty, and still want something to occupy their time. What more delightful than their breeding and rearing poultry, and letting the poor reap the fruits of their endeavours?

To beginners I say, and to all who keep poultry, Read Mr. L. Wright's letters. He is a perfect stranger to me; therefore I may be allowed to say that his communications have in them that which we rarely meet with—a thorough practical knowledge, and from no one have I ever found such useful hints as from him.

I have mentioned a grass run: all poultry are better for it. There are sorts that may be reared without it, but I keep Dorkings solely, and to them a grass run is indispensable.

In January, 1870, my stock consisted of eight hens and two cocks; from these I reared seventy-seven chickens. Many of these were weeded out, and sold for the table. Birds sold and prizes won left me £65 17*s.* 11*d.* The whole of my expenditure, including entrance fees, &c., amounted to £15 17*s.* 10*d.* The clear balance was therefore £50 1*d.* Everything is entered in my book, except the eggs used in my house.

I am also a bee-keeper, but let me warn poultry-keepers about having bees near their fowls. I have had several chickens stung to death; therefore I am determined to be rid of them. I do not find them pay anything like poultry, and I find them a great nuisance in very hot weather to ladies or people unaccustomed to them. In fact, although having had twenty hives at a time, and, therefore, having had some experience, I have had to go to town on important business twice with an eye swollen up. Not pleasant. I found when I went to an hotel the waiters looked with great suspicion on me, and I felt anything but comfortable.—T. E. Kell, *Wetherby.*

A POULTRY EXPERIMENT, AND AN ODD MOUSETRAP.

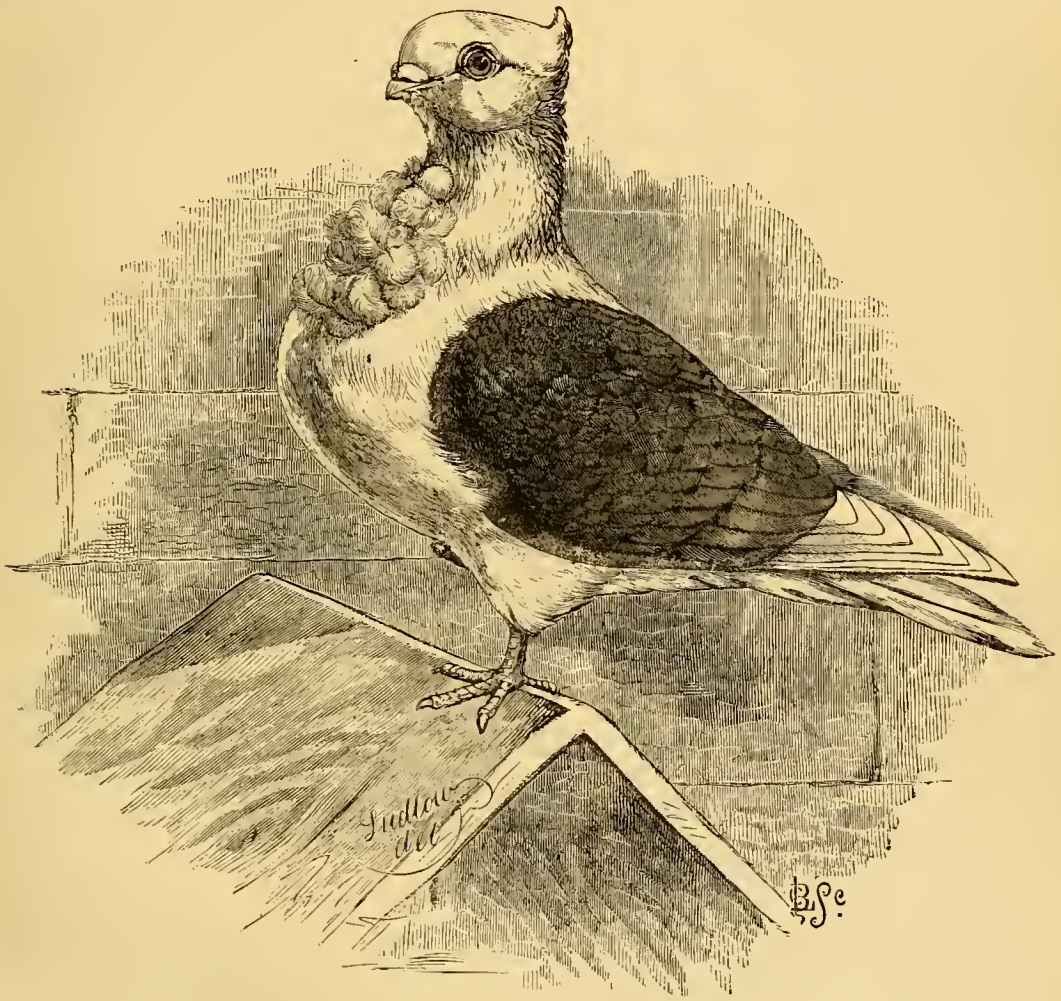
Just now poultry fanciers are dreaming of broody hens and of coming chickens, counting the latter, perhaps, before they are hatched, in spite of the old proverb. As to Canary fanciers they are all in a flutter with whitewashing, and nest-material collecting, and putting this bird into that bird's cage, and thinking they will make a nice pair, and then altering arrangements and forbidding tenderness about to begin. Some are re-reading Blakston's "Commentaries," *vide* vol. xiv. of "our Journal;" some shaking the maw-seed tin, and peeping into the box that contains nest baskets, extra perches, sulphur, tar, cage-divisions, &c. Some, if we are to believe "B. B.," which I for one do not, are teasing their wives with their arrangements for their pets. But good wives are never teased, but pleased to join-in with their husbands' innocent recreations. And the bad ones are like people really intending suicide; they do not talk or write about it. Well, considering then this time of year, and all that is going on in poultry-house and in bird-room, in all sorts of in-the-way and out-of-the-way places, I will relate two circumstances that occurred last season, the first for the benefit of the poultry people, and the second for the class of Canary lovers.

First, then, for the poultry experiment. I removed two hens from a cock bird of quite a different breed, and placed them with a cock of their own breed, making a note of the date. I then sent into the kitchen every egg laid until that day six weeks, and then saved a sitting of eggs and placed them under a hen. Every one came true, and in no chicken was there a trace of the breed of the former cock. So now it need not be "about six weeks, or, probably, a little more than six weeks' separation;" but the fact is established, that six weeks are sufficient. Such was my experiment, and such its results.

Now for fact No. 2. A lady near me "put up," as it is called, a pair of Canaries. The breeding-cage was placed near the ceiling for fear of "puss," but could be moved up and down, and brought near its mistress's eye by means of pulleys and cords, the cords running along the ceiling. All seemed right for a time; the nest was duly made, but the hen did not appear to sit. Down was brought the cage, the nest examined, and in it (oh! horrors!) was a tribe of young mice, cozy and comfortable, and of recent birth. The old ones must have reached the cage at night, running along the cords Blondin fashion. The Canaries were removed and some poison put in the cage, and next morning there were sixteen corpses of adult mice on the cage floor. Mice are the worst troubles I know to a Canary fancier, and cause most excusably, the—not anger—but little waves of trifling displeasure to arise now and then in the minds of our "B. B.s." May they all meet, not the "B. B.s," but the mice, with like expeditiously-killing poison.—Wiltshire Rector.

THE TURBIT.

Among the many varieties of fancy Pigeons, there is scarcely one more charming than the Columba Turbita. It is almost universally and certainly deservedly admired, not only for the pleasing contrast and beauty of its plumage, but also for its neat and elegant appearance. There is a doubt as to whether France or Germany is its native place, since both countries claim it as their own. It is, however, found in a much more perfect state in the south of France, both as regards plumage



and points, than it is in Germany; and from the comparatively small knowledge of the bird exhibited by the modern Teutons, it might not be rash to say that its home is France.

The variety is classed by some ornithologists as the Columba fimbriata, or Fringed Dove, from its flounced and scalloped feathers, and in many respects it differe entirely from those classes of fancy birds that seem to come very near to it in appearance.

The head of the Turbit is something more than peculiar, and therefore very difficult to describe. In the front it should be broad and full, while the top ought to be rather flat. The profile view bears a very striking resemblance to that of the frog, and is one of the most important points to be observed. The beak, though not unlike that of the Jacobin, Columba cuculata, should be shorter and thicker, while the strictly orthodox colour, white, is not to be departed from. The eye should be large and full and of a dark hazel colour, having the pupil black. A point of great merit is for the eye to be encircled by a buff-coloured lash or cere.

The peak or turn crown is now considered to be an essential characteristic, though of the two the former is generally preferred, as it has a much neater and more finished appearance. It must not, however, be confounded with the tuft or shell crown, as seen in other Pigeons, since this—technically termed head dress—would be as much out of place there as it is in character here, being unique. This peak is formed by the feathers rising from the back of the head in a horizontal line with the eye and beak, which terminate in a prettily pointed curvature a little above the head. If this is found placed lower down the neck it detracts very much from the unbroken outline, and spoiling an important point of excellence. In good specimens the neck feathers on both sides incline backwards, and, meeting

together, form a fringe or mane similar to the hog mane in a Jacobin.

Another great point, by no means to be lost sight of, is the gullet. This should be well developed, and the frill below it should extend downwards nearly the whole front of the neck, and at the same time stand well out. The ruffle or frill can scarcely be too large; indeed, the larger it is the more it is admired.

The shoulders of the wing are the only parts of the bird that ought to be coloured, and these should be of a sound uniform hue. The prevailing and more generally-known shades are those of Blue, Silver, Red, Yellow, and Black, the Blue and Silver being distinguished from the others by the addition of black bars, distinctly and clearly marked, which show to advantage when the wing is at rest. The other part of the plumage is pure white, including the ten flight feathers and tail. The thighs also should be equally unspotted and free from dark feathers—a by no means easy point to obtain. Taking the colours separately, it may be noticed that the shade of the Blues should assimilate as nearly as possible to that known as the light sky-blue, or what might be called a bright slaty-blue. The hue of the Silvers should not be that of the washed-out blue type, but thoroughly of the argentine shade, and must be seen in order to be known. Good Reds, like the Yellows, are very difficult to obtain, those usually seen are generally inferior both in colour and points, consequently are not exhibited to the same extent as the Blues and Silvers. The Blacks are scarce, and those of a good rich colour are rarely met with except in their own climate.

As regards size, the birds should be small, neat, and compact in form, having the chest broad and full; the flight feathers and tail must be rather short, and the feet of a bright coral red colour.

The Turbit is not naturally a delicate bird, but, on the contrary, is very hardy, and quite as prolific as any other variety. It is entirely owing to the caprice of those who are anxious to obtain the smallest possible size for exhibition that the constitution of the bird in this country has suffered so much. This, of course, is brought about by the system of breeding in-and-in, a system which it is to be hoped will soon die out, or it will in the end have a strong tendency to destroy the original beauty of the variety altogether.—Birmingham Columbarian Society.

EXHIBITION MISMANAGEMENT.

At Great Harwood Show, on Thursday last, I was an exhibitor. My best Carrier hen and my best pair of Barbs were not in the pen when the birds were judged. I sent Yellow Dragoons, but a pair of Blues were put in my pen, and were highly commended; Yellows being first and second. Strange to say, when the birds were returned mine were all right, showing, I think, that they had been put into the pen of some one else purposely. My birds left Birmingham at 11 A.M. on Wednesday, and were not penned until after 11 on Thursday morning, and some of them not then, being without food and water over twenty-six hours. Again, the Show closed at 4 o'clock, P.M., on Thursday, and the birds did not reach Birmingham until 7.40 P.M. on Friday.—H. Yardley.

[The Show must be an obscure one; we never see it advertised. —Eds.]

POULTRY-KEEPING IN CONFINED SPACE.

Being a lover of poultry and Pigeons, also of gardening for nearly twenty years, it may interest many of your readers to know the result of my poultry-keeping for last year. Three sets of fowls were in a confined space—viz., in run No. 1, about 12 square yards, four Game Bantam hens and one cock; in run No. 2, about 40 yards, nine Houdan hens and one cock; in run No 3, paved house yard, passages, and coach house, about 120 yards, ten Hamburgh hens and one cock.

	Run No. 1. 4 Bantams.	Run No 2. 9 Houdans.	Run No. 3. 10 Hamburghs.
January	Eggs laid 3	3	24
February	,, 12	7	17
March	,, 32	42	57
April	,, 23	133	133
May	,, 22	141	118
June	,, 28	82	117
July	,, 12	39	124
August	,, 13	39	84
September	,, 5	12	36
October	,, 8	11	
November	,, 10	0	
December	,, 7	2	
Total	175	511	715*

My object being to obtain eggs, the Hamburghs show the largest average. My system of feeding is alike with all, but those in the house yard, probably, have had more scraps to pick among. All the potato peelings are well washed and boiled three times a-week, poured boiling on to equal parts of Indian corn, meal, and bran, mashed up into a good stiff consistency, and given each morning warm. About 2 P.M. we give a feed of corn mixed—oats, barley, wheat, and maize. All house scraps and shells of shell fish are thrown to the fowls, also green meat —cabbages, &c.— as it can be procured, sifted ashes, old mortar, and plenty of clean water; houses well cleaned and sanded twice a-week. With this treatment I find my fowls as healthy and well as any I ever see.—A Subscriber.

* 8th October all these n No. 3 killed by a dog.

PRESERVING EGGS.

We recommend the following to the attention of our readers, for we have reason to believe that oiling eggs is the best mode of preserving eggs from the summer until the following spring without their becoming tainted. The following trial seems to have been judiciously conducted. Flaxseed oil is commonly known as linseed oil. "Continued immersion in lime-water gives the egg a peculiar taste, not agreeable: some advise salt water, but it penetrates the egg; ashes, bran, and sawdust do not preserve it; varnishing has been practised, but abandoned on account of the odour and taste which it communicates. The following experiments with pure oil will show their value:—Ten eggs were rubbed with the finger dipped in flaxseed oil, just lightly covered with the oil, which dried in a few days; ten other eggs were oiled in the same manner with the oil of the French poppy, to ascertain the comparative effect of the two oils; ten eggs were not oiled, and received no preparation; the thirty eggs were placed side-by-side, but not in contact, in a vessel, the bottom of which was covered with sand enough to keep them standing upright, three-fourths of each egg being exposed; they remained thus for six months; they were weighed when first put into the tub, and weighed in six months after. The following will show the result:—First, the eggs not prepared lost 18 per cent. of the primitive weight, were half empty and exhaled an odour of corruption; the eggs rubbed with oil of poppy lost 4 per cent., were full, without odour or bad taste; the eggs rubbed with flaxseed oil lost 3 per cent. of primitive weight when it was full, and had the odour and taste of an egg perfectly fresh. Hence, flaxseed oil may be deemed preferable for preserving eggs.—(*English Mechanic and World of Science*).

CANARY JUDGING AT WOODBRIDGE.

How is it that the judge of Canaries at the recent Woodbridge Show has rendered himself conspicuous by reversing the decisions of many of the tried and acknowledged judges in Canary matters?

I sent birds there, to which different judges in London, Yorkshire, Lancashire, and elsewhere have always given prizes, and they are passed over without notice. I sent a Silver Lizard, amongst others, which had never been beaten, for which I refused £4, and it is not looked at; but a wretch of mine, which I will sell for 4s., is placed second. To make matters worse, having been beaten (as was stated, I saw, in last week's Journal) for the cup by birds receiving very high commendations that were not worth giving a prize to—having had my crack Lizard so insulted that he had to be put up with two hens to get his temper right again—I receive the following from my agent in London:—"Your birds arrived from Woodbridge without previous notice; one best Mule dead, the lot queer; it is a scandalous shame." Fair thee well, Woodbridge! No more birds from—H. A.

Fowls *versus* Ducks as Egg-producers. — The question whether fowls or Ducks are the better investment for the production of eggs has to some extent been settled experimentally. It was found that on choosing three chickens and three Ducks hatched in February of the same year, the Ducks took the lead, laying 225 eggs in autumn while the fowls laid none. All were liberally fed with various kinds of food. The Ducks recommenced the next February, and laid without interruption until August. They showed no inclination to breed, became thin at first, but gained afterwards. The following table gives the details of the season:—

	Eggs laid by the Fowls.	By the Ducks.
January	26	none
February	37	24
March	39	63
April	41	68
May	39	82
June	33	72
July	32	70
August	10	13
Total	257	392

This is at the rate of 86 eggs per fowl, and 131 per Duck. 100 fowls' eggs weighed 12.1 lbs., and the shells, 1.44 lbs.

100 Ducks' eggs weighed 11.8 lbs., and the shells, 1.54 lbs. The solid substance of the former was 26 01 per cent., and of the latter 28.98 The fat amounted to 11.27 per cent in the fowls', and to 14.49 in the Ducks' eggs. The Ducks thus appear to be the winners in the competition.—(*Food Journal.*)

STROUD CANARY SHOW.

I WISH to draw the attention of Canary-fanciers to the fact that there will be a show at Strond at the end of May. I have had a schedule forwarded to me, and I find that the committee have arranged a most liberal prize-list, by far the best I have seen at any show in its infancy. There is also a cup, valne £3 3s., for the exhibiter who gains most points, and very high commendations are not to count. Nothing will have such a damaging effect to shows in general than this intensely stupid plan of giving points to very highly commendeds, and I most earnestly hope that exhibitors will set their faces against it, and decline altegether to have anything to do with shows where this plan is adopted; I for one certainly shall. And again, I think it would be a good plan if, when entering for a cup, exhibitors were made to sign something to this effect. "I solemnly declare that the birds entered by me to compete for the cup No. —— are solely my property, and that I have not borrowed a bird from anybody." It is easy enough to win if yon have the pick of half a dezen studs, but borrowing is surely not fair, and ought to be put a stop to, both in Canaries and poultry.

I hope exhibitors will enter largely at Stroud, for if the Show succeed this time, I have good authority when I say that "it will become a permanent association, and the exhibition next year and in future will be on a much more extended scale."—HOWARTH ASHTON, *Prestwich.*

NOTES FROM MY CANARY ROOM.—No. 4.

How are the birds getting on by this time? In all probability they have had a few quarrels on the *amantium iræ* principle, and are now good friends. Here the weather has been very cold indeed, which has its effects in retarding their matrimonial and house-keeping duties; but in more favoured situations, and specially in rooms where there is a fire, matters ought to have progressed more rapidly. Some, I daresay, are thinking about building, carrying stuff about, putting it in the nest box very carefully, and taking it out again as carefully. Have a little patience and you will find things will go on very pleasantly in the course of a day or two. Others will have settled down to the duties of their position in an old-fashioned way it is good to see, portending a due attention to parental requirements: will be sitting on the edge of the nest talking matters over and making love in whispers, while the young wife shows her spouse how prettily she has lined her *berceaunette.* When the hen lays her first egg remove it, and put it away in a spare nest or any convenient receptacle having a soft lining. Continue to do this till she has laid her third, and on the evening of that day or on the morning of the fourth give her the eggs, when she will at once begin to sit, unless, as is sometimes the case, she be going to lay above the average number, in which case she will most likely not commence sitting in earnest till she has laid more than four.

All hens do not commence to sit when the first egg is laid, but some do; many do, and if such be the case, all the young ones will not chip at the same time. It is to remedy this that I recommend the eggs to be removed till the hen has laid what may be considered an average nest. The young ones will make their appearance on the morning of the thirteenth day, following that on which the hen began to sit, and it is desirable to have all of the same age in the same nest. A day makes a world of difference in the size, strength, and take-care-of-yourself character of a young Canary.

But I am counting chickens too soon. The hens must lay the eggs first, and in performing this duty they sometimes give cause for uneasiness. A little observation and experience will soon indicate when a hen may be expected to lay, the lower part of the body being much distended. It may possibly be announced by the hen's being seen in the middle of the day apparently in robust health, bustling about in a matronly fashion, and being found an hour or two later at the bottom of the cage with closed eyes and outstretched wings, the very picture of misery, and apparently hastening rapidly to her end. This need not cause any alarm. It is all as it should be, and as Mrs. Gamp would say, "Betsy 'Arris, she'll 'ave to be worse afore she's better." Do not molest her in any way. She will manage to find her way into the nest, and next morning the egg will be there.

But, if such should not be the case, and the hen be "egg-bound," unable to lay, take her gently but firmly in the left hand, with the tail projecting between the thumb and first finger, and expose the vent freely to the steam of boiling water, by holding it over the neck of a jug about three parts full, which will generate vapour hot enough to make even the exposed part of the hand uncomfortable—a very good gauge. Give her two or three minutes of this vapour bath, and then let fall one or two drops of sweet oil on the vent, which by a spasmodic action will absorb it. Place the hen gently in her nest, and in nearly every instance she will lay almost immediately.

Continue to supply fresh water daily, and if the hen feel disposed to have a bath, let her indulge. It will do good rather than harm. She will not often leave her nest to feed, and a little egg given now and then will be carried to her by the cock.

When the hen has begun to sit, or sooner if need be, the cock may be passed through to the second hen if second hen there be. The loss of her mate may make her just a little restless at first, but her love for her eggs, and the instinct which leads her to sit on them will soon overcome this.—W. A. BLAKSTON.

VENTILATION OF HIVES.

THE prosperity of bees is dependant to some extent upon the material of which their hives are formed, but whether straw is greatly preferable to wood may admit of debate. Many give their verdict in favour of straw, because it possesses the excellent property of being a good non-conductor of heat or cold; but in the hot summer of last year the combs of several straw hives melted and fell down, whilst those of wooden boxes in the same situation sustained no injury. It is also alleged that hives of wood are much more liable to be afflicted with internal moisture than hives which are made of straw. De Gelieu, however, who had long experience in the use of both tells us, in effect, that he never could perceive any difference between them; and Mr. Lowe, who is a high authority, mentioned to me some time ago, that in his boxes, which are well protected by sheds, internal moisture is a thing unknown. Now this immunity which his bees enjoy from an evil with which our apiaries are occasionally visited is not due to ventilation or any of those appliances which have been recommended for carrying off vapours, and I am inclined to think that when these vapours are condensed, it is oftener to be ascribed to some peculiar state of the bees under unfavourable conditions of atmosphere than to the wood of which hives are made.

The mode of ventilation employed by "J. E. B." is a very good one, and I quite approve of the period when he begins to put it in practice; but the question I wished the "LANARKSHIRE BEE-KEEPER" to answer referred to the propriety or non-propriety of having recourse to ventilation after the fall of snow, in order to prevent the exodus of bees. If the ventilating process is applied in November, will its virtue extend to early spring and operate in counteracting the evil influences of warm rays and reflected light which so often allure bees to destruction? For several winters my unventilated boxes, whether wholly or partially protected, have been exempt from dampness, and I have had no reason for complaint since the winter of 1864-5, when its presence was manifested in every kind of hive.

The superiority of straw over wood is certainly not very great, and as there are many who would like to have boxes, but are deterred from getting them on account of the expense, they will perhaps be pleased to learn that this need be no longer an obstacle in their way; for bees will thrive well in any kind of wooden boxes, and it is not at all essential to their well-being that the boards of which the boxes are made should be an inch or an inch and a half in thickness, as is generally recommended. It is now seven years since I first made use of half-inch wood, and in domiciles made of this thin material, I have found that swarms wintered nearly, if not quite as well as in those which were made 1 inch thick, and of the best American yellow pine. Packing cases—such as those in which litchis are sent from China to this country make excellent hives. I have no doubt that plenty of them can be had in London for 6*d.* or 1*s.* each, and any person who can use a saw and hammer may with very little trouble reduce them to the dimensions required. I speak advisedly, having fully tested them.

But whilst affirming that boxes of the description referred to will be found to answer the purposes of the apiarian very well, it must not be supposed that I regard them as in any degree superior to the more substantial and costly. The results, however, which they give are very different from what their appearance would at first sight lead us to expect.

As showing how capable bees are of passing successfully through a severe winter in thin wooden hives, I may relate an experiment which I made in October last. Having a small box

made of ½-inch pipe, I put into it six frames that were half filled with sealed honey. A swarm was then driven into it, and the entrance made to face the north. As the cover was only a quarter of an inch in thickness, I spread a small piece of carpet on the top, and surmounted the whole with a broad slate to throw off the rain. No other protection was given, yet on the 2nd of March, when I made an examination, I found that scarcely any of the bees had perished, although the thermometer during the winter had been several times within a few degrees of zero. The little hive was as strong and healthy as the best protected in my apiary. Its food, as I expected, was nearly exhausted, but then it is to be remembered the supply to begin with was deficient. The defect was easily remedied—I had only to remove the exterior frames, and put two well-filled ones in their places.—R. S.

OUR LETTER BOX.

Poultry-yard Plan (*J. K. O.*).—We do not think you are undertaking too much. We presume the run marked E for the chickens is grass. It should be. A cart shed is a good place for chickens to run in; still better if they can be put near to haybicks. Many of the fowls will roost in the cart shed; let them do so. If your roosting places C had the doors in one corner it would be better than in the middle. Let the open shed be some inches deep in road grit, and if any runs have no grass, supply them with sods cut with plenty of earth. You will do better if you feed on ground oats mixed with water in the morning, with maize at mid-day, and oatmeal in the evening.

No Eggs—Feeding (*A. A. C. C.*).—The cold winds and the unkind weather have had much to do in checking laying. Among the good things you provide for your poultry, we see no mention of any green food. If they have no grass they must be supplied with large sods cut with plenty of earth. We advise you to feed as we have recommended to "J. K. O." Discontinue potatoes, rice, and pearl barley. Instead of the mid-day meal of maize give your house scraps. You may sometimes vary the meal of ground oats by substituting Indian corn. The hen with the pendant crop should be confined for a time without water, and be fed with water having wormwood in it. By the term "take their food away," we fancy you feed from a trough. If you do, discontinue it. It is an unnatural way to feed an animal that has no means of masticating, and has caused the pendant crop of which you complain. The food should be thrown broadcast, that the birds may be occupied in picking it up in a natural way.

Brahma Hens not Laying (*A Lancashire Subscriber*).—Many hens have not yet begun to lay. If they were pullets you might have cause for complaint. The weather has been very unfavourable for laying. Now it seems changed we have no doubt you will have eggs. We shall not be surprised if you have them before you read this. Discard all such notions as putting fowls before the fire. It tends only to make them fat and lazy, and hinders laying.

Cochin Dying Suddenly (*Subscriber of Many Years Standing*).—It is not uncommon for a Cochin cock to drop off his perch dead at this season of the year, and the red appearance of the breast bone has nothing in it contrary to perfect health. The empty state of the crop merely shows death took place some time in the morning, but before daylight. He died of rupture of the liver; but in such cases there is generally much coagulated blood in the heart. The eggs will be good for a fortnight or even more. Eggs may be set safely after a hen has been running a week with a cock. In January a cock should have only four hens if the eggs are for incubation. The number may be increased every month. Now he may have ten or twelve. Buenos Ayreun Ducks do not pair.

Duck-footed Dorking (*C. M. S.*).—A duck foot is a disadvantage, but it is not a disqualification in a Dorking cock. We should, nevertheless, prefer a breeding bird without it.

Black Indian and Rouen Ducks together (*Kendal*).—You were misinformed when you were told Buenos Ayreans will not cross. They do so freely. We have known a drake desert all the Ducks of his own breed and pair himself to a wild Duck.

Preserving Eggs (*S. S.*).—The usual mode is to bury eggs in slaked lime and water. Be sure their shells are entire, and put them down when very fresh. Place them in layers, and as fast as a layer is completed pour on enough of the slaked lime to hide them. It will harden in a day or two, and then you may put a fresh layer, and so till the pan is full. See what is said to-day about oiling eggs. Oatmeal, green food, and shreds of meat put in water are good food for young Ducks; they should be fed four times per day.

Hens Fighting (*Subscriber*).—Take away the strangers, they will never agree. The safest plan when you wish to introduce fresh birds is to put them on the perch with the others at night when it is quite dark. In time they would become reconciled, but it is not worth doing during the laying season.

Fowls Trespassing (*F. Wood*).—It would be illegal to shoot them. Your neighbour is bound to keep his fowls from trespassing; send him a written notice that if he do not you will sue him in the County Court. Galvanised-iron netting, 2 feet high, without any bar at the top, placed above the wall would prevent the intrusion.

Poultry Keeping (*E. Robinson*).—As you do not understand how to manage them, enclose seven postage stamps with your address, and order the "Poultry-Book;" you will have it sent post free, and find in it the information you ask for, and much more that you ought to know.

Poultry Judging at Woodbridge.—We have received a long letter from Mr. Douglas in reply to Mr. Watts. The essence of the reply is that Mr. Watts's birds were out of condition, and the prize birds were better. We can insert no more on the subject of this Show, and regret to find so many complaints about it.

Mr. F. Graham's Pigeons.—We hear from one of the Secretaries of the Crystal Palace Show, that Mr. Graham's Pigeons did not arrive there until the judging was nearly over.

Drones on Lady-Day (*E. Mills*).—Your drones are early, and their appearance probably predicates an early disposition to swarm. You may certainly put on a super in April, if the hive appears crowded and the weather be favourable.

Bees Fighting (*R. M.*).—If the hives are too close together the bees may mistake their homes on returning, which would account for the fighting of which you complain. The remedy in this case would be to shift them gradually farther apart, little by little, until the quarrelling ceases. Or the same end would be more quickly obtained if you could move one of them for a few weeks to a new position not less than a mile and a half distant, taking care not to again place them too close together.

METEOROLOGICAL OBSERVATIONS,

Camden Square, London.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude 111 feet.

Date.	9 A.M.					In the Day.				
1871. March.	Barometer at 32° and Sea Level.	Hygrometer.		Direction of Wind.	Temp of Soil at 1 ft.	Shade Temperature.		Radiation Temperature.		Rain.
		Dry.	Wet.			Max.	Min.	In sun.	On grass	
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
We. 29	30.411	43.0	42.5	N.E.	44.2	48.8	31.1	83.1	27.6	0.010
Th. 30	30.293	44.3	41.8	N.E.	43.7	51.2	39.6	87.2	36.6	—
Fri. 31	30.086	45.4	43.2	N.W.	44.3	54.8	40.0	98.6	36.9	—
Sat. 1	29.961	42.1	40.0	N.E.	45.2	51.8	38.2	92.4	36.7	—
Sun. 2	29.982	47.2	44.0	N.W.	44.8	54.0	36.6	83.2	31.2	0.020
Mo. 3	29.728	47.1	45.8	N.W.	45.2	58.0	42.1	90.4	39.2	—
Tu. 4	30.110	46.0	40.9	E.	45.4	55.8	37.6	102.2	36.3	—
Means	30.082	45.0	42.6		44.7	53.2	37.9	91.0	34.9	0.030

REMARKS.

29th.—Cloudy and damp in the morning, and slight rain at 8 P.M., heavier in the city.

30th.—Dull morning, but fine in the after-part of the day.

31st.—Fine and warmer, but windy at night.

April 1st.—Overcast in the early part of the day, but fine in the afternoon.

2nd.—Dull morning, brighter about noon, but cold and dull at night.

3rd.—Shower in early morning, fine, but not much sun, except at intervals.

4th.—Dull in morning, fine at noon, beautiful evening, occasionally very warm sun. Fine sunset.

Another dry week, only three-hundredths of an inch of rain having fallen. Temperature very near the average.—G. J. Symons.

COVENT GARDEN MARKET.—April 5.

Some very good new Grapes have made their appearance, at from 20*s.* to 25*s.* per lb. Of Strawberries there is a much larger supply than is wanted, and they are a drug on the market, not bringing more than from 1*s.* to 1*s* 6*d.* per oz. There is a better supply of French vegetables this week. We have no further alterations to report.

FRUIT.

		s.	d.		s.	d.			s.	d.		s.	d.
Apples	½ sieve	1	6	to	3	0	Mulberries	lb.	0	0	to	0	0
Apricots	doz.	0	0		0	0	Nectarines	doz.	0	0		0	0
Cherries	lb.	0	0		0	0	Oranges	℔ 100	6	0		10	0
Chestnuts	bushel	10	0		18	0	Peaches	doz.	0	0		0	0
Currants	½ sieve	0	0		0	0	Pears, kitchen	doz.	2	0		6	0
Black	do.	0	0		0	0	dessert	doz.	3	0		8	0
Figs	doz.	0	0		0	0	Pine Apples	lb.	6	0		10	0
Filberts	lb.	0	0		2	0	Plums	½ sieve	0	0		0	0
Cobs	lb.	2	0		2	6	Quinces	doz.	0	0		0	0
Gooseberries	quart	0	0		0	0	Raspberries	lb.	0	0		0	0
Grapes, Hothouse	lb.	10	0		20	0	Strawberries	oz.	1	0		1	6
Lemons	℔ 100	6	0		10	0	Walnuts	bushel	10	0		16	0
Melons	each	0	0		0	0	do.	℔ 100	1	0		2	0

VEGETABLES.

		s.	d.		s.	d.			s.	d.		s.	d.
Artichokes	doz.	4	0	to	6	0	Leeks	bunch	0	4	to	0	6
Asparagus	℔ 100	7	0		10	0	Lettuce	dnz.	1	0		2	0
Beans, Kidney	℔ 100	2	0		3	0	Mushrooms	pottle	1	0		2	6
Broad	bushel	0	0		0	0	Mustard & Cress	punnet	0	2		0	0
Beet, Red	doz.	2	0		3	0	Onions	bushel	5	0		8	0
Broccoli	bundle	0	9		1	6	pickling	quart	0	0		0	0
Brussels Sprouts	½ sieve	3	0		4	0	Parsley	sieve	3	0		6	0
Cabbage	doz.	1	0		2	0	Parsnips	doz.	0	9		1	0
Capsicums	℔ 100	0	0		0	0	Peas	quart	0	0		0	0
Carrots	bunch	0	4		0	8	Potatoes	bushel	2	0		4	0
Cauliflower	doz.	2	0		5	0	Kidney	do.	3	0		4	0
Celery	bundle	1	6		2	0	Radishes	doz. bunches	0	6		1	0
Coleworts	doz. bunches	3	0		6	0	Rhubarb	bundle	0	9		1	6
Cucumbers	each	0	6		1	6	Savoys	doz.	1	6		2	0
pickling	doz.	0	0		0	0	Sea-kale	basket	2	0		3	0
Endive	doz.	2	0		0	0	Shallots	lb.	0	6		0	0
Fennel	bunch	0	3		0	0	Spinach	bushel	3	0		5	0
Garlic	lb.	0	3		0	0	Tomatoes	doz.	0	0		0	0
Herbs	bunch	0	3		0	0	Turnips	bunch	0	6		0	9
Horseradish	bundle	3	0		5	0	Vegetable Marrows	doz.	0	0		0	0

POULTRY MARKET.—April 5.

There is a great scarcity of young poultry, and prices are very high. It will no doubt last for some time, as we are paying the penalty of the long winter. The laying and sitting were *nil* for some weeks.

	s.	d.		s.	d.		s.	d.		s.	d.
Large Fowls	6	0	to	6	6	Pigeons	0	9	to	0	10
Smaller ditto	5	0		5	6	Rabbits	1	5		1	6
Chickens	4	0		4	6	Wild ditto	0	9		0	10
Ducklings	6	0		6	6	Hares	0	0		0	0
Goslings	8	0		9	0	Guinea Fowl	3	0		3	6
Pheasants	0	0		0	0	Grouse	0	0		9	0

WEEKLY CALENDAR.

Day of Month	Day of Week	APRIL 13—19, 1871.	Average Temperature near London. Day.	Night	Mean.	Rain in 43 years. Days.	Sun Rises. m. h.	Sun Sets. m. h.	Moon Rises. m. h.	Moon Sets. m. h.	Moon's Age. Days.	Clock before Sun. m. s.	Day of Year.
13	TH	Royal Botanic Society's Show closes.	55.6	33.9	44.7	17	11 af 5	50 af 6	8 af 3	24 a 11	23	0 34	103
14	F	PRINCESS BEATRICE BORN, 1857.	57.0	36.1	46.6	17	9 5	52 6	42 3	after.	24	0 19	104
15	S		58.4	37.8	48.1	21	7 5	53 6	11 4	54 1	25	0 4	105
16	SUN	1 SUNDAY AFTER EASTER.	57.4	37.1	47.3	27	5 5	55 6	31 4	7 8	26	after.	106
17	M		58.2	35.8	47.0	15	2 5	57 6	50 4	19 4	27	0 25	107
18	TU	Meeting of Zoological Society, 9 P.M.	56.8	38.0	47.4	16	0 5	59 6	6 5	29 5	28	0 39	108
19	W	Royal Horticultural Society's Spring Show, [Fruit, Floral, and General Meeting.	59.0	35.6	47.3	10	58 4	0 7	22 5	37 6	●	0 53	109

From observations taken near London during forty-three years, the average day temperature of the week is 57.5°, and its night temperature 36.3°. The greatest heat was 77°, on the 18th and 19th, 1854; and the lowest cold 20°, on the 15th, 1862. The greatest fall of rain was 0.56 inch.

GREENHOUSE PLANTS.—No. 1.

IN this and subsequent papers I purpose to treat of some of the plants which, from the profusion and beauty of their flowers, or the colours and forms of their foliage, are desirable for the decoration of the greenhouse. The structure, however, having considerable effect on the plants grown in it, I must first allude to that.

A greenhouse, as we accept the term, is a glass structure devoted to plants not requiring a higher temperature than is sufficient to secure safety from frost; but we have a variety of plants to cultivate—some of these flower in summer, and therefore require to be kept from undue excitement in winter, and others flower in winter, and need a temperature of not less than 40°, though in very severe weather 35° may not be attended with injury, and from 40° to 45° is the temperature which I consider should be kept up for the safety and well-doing of a mixed collection of greenhouse plants. Beyond this, fire heat is injurious.

As distinguished from a conservatory I think a greenhouse is a plain structure of glass, with timber or iron, or a combination of both, and walls of brick or stone. No structure in the end is so dear as a frail one. Neither inside nor outside do you look for any attempt at ornamental architecture, and the size and form are variable, being determined very often by the means. In a conservatory we look for something more than a plain glass structure; we expect it will be in size proportionate to the mansion, and of a style, as regards its architecture, to harmonise with that mansion. Conservatories as a rule have considerable elevations—high upright fronts, and roofs very much higher than greenhouses, and this loftiness, combined with the greater obstruction to the light by the use of much more massive timbers, &c., renders them unfit in a great measure for the most desirable of greenhouse plants, except such as attain considerable size, and succeed, as do some remarkable for their foliage, in a not very light structure. However, conservatories of late years have been very much improved both in appearance and suitability for plant growth; and there ought not to be any material difference as regards light and ventilation between a conservatory and a greenhouse, though the former may be very different in size, loftiness, and architecture from a greenhouse.

As regards the form of a greenhouse, there is no disputing the fact that a span-roof is the best; but the lean-to form is the more economical one, as very often advantage is taken of a wall already built, which is a great saving of first cost, and enables many to have a small greenhouse who otherwise could not have one. The great drawback of lean-to houses is that plants are inclined to become one-sided, but they may nevertheless be grown very well in such structures, yet not so good in form as in span-roofed houses, which admit light on all sides of the plants. Admitting light to the fullest extent consistent with a substantial structure is perhaps the most important part of greenhouse construction. Light on all sides of plants is the way to have them symmetrical.

The next essential of a greenhouse is the means of admitting abundance of air, and to effect this the whole of the front lights should be made to open to an extent equal to half their height. For instance, the whole height being, say 4 feet, and the lights being hinged at top, they should open 2 feet at bottom, which will admit half the amount of air that there would be were the lights entirely removed, and just half that of lights hung on pivots. The latter, when the side lights are very high, is a good mode of opening; the front being divided into two parts, and the lower opening on pivots, as much air will be admitted as if the whole height were formed into lights hinged at the top, and half opened.

At the highest part of the house provision should be made for openings quite equal to those in front, and these being provided throughout the length of the house, enough air will be admitted for successful practice. If the house is a span-roof it is desirable that both sides should be formed so as to admit air; though this is not always done, yet it is very desirable.

As regards the construction, the front wall of a lean-to or the side walls of a span-roofed house ought not to be more than 2 feet 3 inches high from the floor line, and the front lights of a lean-to or the side lights of a span not higher than 3 feet, nor less than 2 feet 6 inches. Along the whole of the front, and along both sides of a span, I prefer a stage of laths, their upper surface level with the bottom side of the wall plate, and 3 feet wide, taking the stage all round—along both ends of a lean-to and a span, wherever there is glass, except across the doors. The roof I would have at an angle of 45°, irrespective of width. This will give sufficient head-room over the pathway next the 3-feet stage along the front and both ends, and all round if a span; and in the case of a lean-to of considerable width there is no objection to a walk at the back, leaving a foot or 18 inches of space for a border, so as to utilise the back wall for plants. The remaining part not wanted for the walk, which walk need not be more than 3 feet wide for a greenhouse, may be disposed of as a step stage, the first shelf being on a level with the front or side stage, and the steps may be from 9 inches to a foot high, and as wide as you like, only I think 1 foot quite wide enough for the first shelf of the stage, and 6 inches increase for everyone, and the top the width of the steps on one side, or one-third the width of the central staging. Along the whole length of the front I would have a border 2 feet deep, and staging 3 feet wide, for climbers for covering the roof.

The front or side lights and the ends should have supports to correspond with the roof timbers, and though they must be framed for opening, I should dispense with sash-bars altogether, and employ extra thick uprights and rafters, and instead of two, three, or more panes, have but one. The roof rafters to be 3 feet apart, with one sashbar between each; panes thrice as long as wide, to have no lap, but straight joints, and immediately under each a small cross-bar of wood chamferred, and half an inch wide, let into the rafter and sashbars level with the rebate; bed

the panes there on white lead, fill the space between the cuts of the glass with it, and cover the joint outside with leaf lead; glass 26-oz. to the foot, and thirds quality. Each rafter to have three wires for climbers, one immediately under the rafter, and the others on each side 7 inches distant, and 9 inches from the glass.

Provision should be made to retain the water from the roof; a brick tank cemented is good. As to its size, that depends on the size of the house, but I find one with a content of a cubic foot for every 6 square feet covered will be sufficient for all but very dry periods.

As regards heating, that will depend on circumstances—some heat with hot-air flues, some use a stove, but most now adopt hot water. For houses not over 15 feet wide a 4-inch flow-and-return pipe along the front and one end will be sufficient for a lean-to, or for a span of that width two 4-inch pipes along both sides, adding two for every 9 feet of width. This will maintain a sufficiently high temperature.—G. Abbey.

TAP ROOTS.

"And what about them? The less we hear or see of them the better," many will say; but everyone is not of that opinion, and I am one of them; for, where the subsoil, as well as the surface soil, is suitable, and the plant sends down tap roots, it is only obeying one of those laws of Nature which we cannot amend, excepting, perhaps, in the case of some of the tenderest fruits. That these may or may not suffer injury by a single root or two descending perpendicularly from the collar, I am not prepared to give a decided opinion; but all our ornamental and forest trees must be benefited by it, otherwise Nature would not prompt them to do so. I am not sure that some of our failures in transplanting certain subjects do not arise from the fact of their tap roots having been ruthlessly severed, and thus more injury is, perhaps, inflicted on a plant than is ever apparent the first year.

Let us take, for instance, some of the Cypress tribe, whose dense heavy tops present an obstacle to the wind, but cannot always withstand it, and a blow-down is the result. Now, are we sure the same effect would have been produced had there been a good hold of mother earth by means of a formidable tap root? Most assuredly this would have offered a resistance to the wind, which otherwise the tree was unable to give. Let us look at trees that are blown down, and we shall generally find the tap roots have decayed, or there has not been any. Certainly there are some trees not prone to produce tap roots, as the Ash and Sycamore, but many do make this growth when not thwarted by anything in their way, and most likely if the best examples of trees we have were examined, a great proportion of them would be found with this essential fastening to their position.

Considering how beneficial a part a tap root has on the well-being of single plants, and how desirable it is in removing them to another place to take care and place it in a similar position again, there are certainly cases where this rule must be accepted with some modification, as in the case of seedlings crowded together. We all know that the first instinct of a plant just bursting from its seed vessel is to send its root downwards in search of food and maintenance; and if that seed be thickly surrounded by others like it, each must do the same, and, further, continue to do so for the very reason that there is not space for the roots to travel laterally, the ground being fully occupied with these; consequently the root becomes more elongated than it would be where there is more space for each specimen. In removing these seedlings a portion of the root is almost, as a matter of necessity, cut off, so as to induce the formation of laterals. This cutting off, however, is only to be recommended as making amends for the injuries caused by the former artificial mode in which the plant has been treated, for assuming a case of Nature's sowing, we there have the seeds wide apart, and no check to the production of lateral roots any more than there is to these becoming vertical, and the plant, suiting itself to circumstances, makes both as the nature of the ground and other conditions permit. Our noblest trees have all, doubtless, had such an origin, and what can exceed them in beauty and interest? In the greater number of cases, therefore, I say let tap roots alone, for if the ground be suitable for them they will do good service, and if not, they will cease to act; but in the latter case there is much doubt of the specimen doing well. Perhaps those having most reason to find fault with tap roots are those who have large trees to grub up; they find a good tap root more troublesome than they would wish, and even in their case the tree maintains an upright position longer than it otherwise would.—J. Robson.

THE GOLDEN PYRETHRUM.

I believe that fewer plants among the many novelties which have been recently introduced for summer flower-gardening have obtained a greater notoriety, or obtained a wider circulation than the Golden Pyrethrum. This I consider very good evidence of its general adaptability for the purpose. Still there are situations in which if planted it will fail to give satisfaction, and this will, I think, account in some measure for the too sweeping condemnation it has received from some of your correspondents.

For instance: if planted on an inclined surface, where in all probability it will receive little water during the summer, I know of no plant so ill-adapted for such a position. It would be an eyesore all the season. Again, when unevenly matched with a larger and a grosser-feeding plant, it is never seen in its true character, its bigger neighbour appropriating to itself the lion's share of the ground's fertility. But the case is different when this Pyrethrum is planted in ordinary soil that has been well worked and moderately manured during the winter. With a modest grower like itself for a companion, and the necessary attention paid it during the summer, in picking all flower buds off as they appear—a process which involves very little labour, as a man can easily go over a thousand plants in a couple of hours—if a fair trial be given I venture to say that this plant would establish itself in the estimation of those who now despise it. My object in noticing it is, however, not so much to advocate its summer cultivation as to draw the attention of your readers to its excellence as a spring bedder. I have grown it extensively as such for the last two seasons, and can unreservedly recommend it as one of the easiest-grown and most effective plants for that purpose.

To procure plants for the spring I allow the summer ones to remain in the ground all the winter, until about the middle of March, when I take them up and divide them, retaining as many roots attached to the offsets as possible.—Owen Thomas.

CULTURE OF STRAWBERRIES IN POTS.

A correspondent complains, that though he has fine plants, he obtains little fruit, and these no better than water. He places his pots on a stage under the shade of climbers and Vines. Even with abundance of air, the bloom will set imperfectly, and though the fruit will swell when set it can have little flavour without unobstructed light.

Another correspondent has tried a narrow hot-water pit with a temporary stage, so that the pots may be 15 or 18 inches from the glass; but here, though the plants grow well and show fine flower trusses, these often set badly in dull weather, as the leaves and flowers are covered with condensed moisture. In this respect low flat-roofed pits are greatly inferior to a steep-roofed house for early forcing. Later in the season such pits answer very well. For early work I have found every corner of the green leaf and every notch in the bloom, as well as the parts of fructification, glistening in the morning with large bright dew-drops. A little of this is all very well, but too much of it makes the fertilising pollen as much inert paste. In such places a whole day with air on, and a little additional heat when the weather is heavy and muggy, will hardly be sufficient to dry the plants, and especially the parts of fructification. If the pit is sunk below the ground level this will be all the more likely in early forcing, however the pots be placed on a stage. The best remedy in such cases is to give a little more dry heat, leave air on, if only a quarter of an inch at the top and bottom, all night, and cover the glass at night with mats, calico, or any thin covering. This covering, however thin, as it arrests the radiation of heat, will greatly prevent the condensation of vapour and the deposition of dew freely on all parts of the plants. For early forcing I prefer to a pit a larger steeper-roofed house.

Though using saucers for Strawberry pots when on shelves over other plants that would be injured by the drip, I do not approve of them when they can be dispensed with, and when used, the water, after watering, should not be allowed to stand in them. Hence I have used thin turf reversed for setting the pots on, which answers very well if one can fruit the plants where thus set, but it does not answer well when the plants have to be moved from place to place. Moss covered with a

little leaf mould also answers very well, and such pots may be moved with a little care, taking the moss with them, and along with it the roots which have protruded through the bottom of the pot. These modes are chiefly resorted to to save watering, and to have a moist bottom for the pots without the chance of standing water. The result, however, of some experience leads me to the conclusion that with extra waterings Strawberry plants in pots never do better than when the pots stand on a hard substance, as a wood, stone, or slate shelf, and where the roots have no enticement to come out at the bottom. The additional watering then required, sometimes twice on a bright day, appears to give a greater strength to the plant and a larger size to the fruit if weak manure water be frequently used. I am certain that many an amateur who tries Strawberries in his little house often comparatively fails, because he makes the Strawberry a marsh plant by allowing the saucers to stand nearly full of water. Let me advise a fair trial of dispensing with the saucers and watering oftener, using a little rich compost at the surface of the pot and weak manure waterings.—R. Fish.

GROUND LEVELLING AND PRACTICAL GARDEN PLOTTING.—No. 15.

DRAWING PLANS.

To draw and transfer *fig.* 38 to the ground, draw the rectangle A B C D, and the diameter lines E F and G H; draw lines 1 2, 3 4, also lines 5 6, 7 8, 9 10, 11 12, 13 14, 15 16, 17 18, and 19 20. From centre O draw arcs *i* and *k*; from point *g* draw arcs *u*, *v*, *w* and the circle *g*; from point *e*, on line G H, draw arcs *f*, *r*, *s*, *t*. Draw the corresponding side in the same manner.

To transfer the plan to the ground, erect the rectangle A B C D, the length of the side A B being 53 feet, and B C 89 feet 6 inches. Insert stakes at each point, and lay lines connecting them; line C D is equal to line A B, and line A D equal to line B C. Lay the diameter lines E F and G H. Where the two lines cross each other insert a peg as at centre O. From the stake at point A, on line A D, measure 15 feet 6 inches, and insert a peg as at point 5; from the same stake measure 19 feet 6 inches, and insert a peg as at point 7; from the same stake measure 24 feet 6 inches, and insert a peg as at point 9. Again, from the same point measure 28 feet 6 inches, and insert a peg as at point 11. Find the corresponding points on line B C in the same manner, and insert pegs as at points 6, 8, 10, and 12. On each side of line E F measure 2 feet, and insert pegs as at points *a*, *b*, *c*, *d*. From the peg at centre O, with a string 9 feet long, trace arc *i*; reduce the string 4 feet and trace the circle. As the lines are traced, insert pegs 6 or 7 inches apart. From the stake at point E measure 4 feet on line E F, and insert a peg as at point *g*. From the peg at point *g*, with a string 17 feet long, trace arc *u*; reduce the string 4 feet, and trace arc *v* (the width of the walk is 4 feet); again reduce the string 5 feet, which is the width of the beds, and trace arc *w*; reduce the string 4 feet, and trace the circle *g*. From the stake at point F, on line F E, measure 4 feet, and insert a peg as at point *h*; points *h* and *g* are equal. From the peg at point *h* trace the arcs corresponding to *u*, *v*, and *w*, and also the circle as traced from point *g*. On each side of centre O measure 20 feet on the line G H; insert a peg at each point, as at *e*. From the peg at *e*, with a string 20 feet long, trace arc *f*, meeting line 5 6; reduce the string 4 feet, and trace arc *r*, meeting line 7 8; reduce the string 5 feet, and trace arc *s*, meeting line 9 10; again reduce the string 4 feet, and trace arc *t*, meeting line 11 12. Lay lines by the pegs inserted at the arcs traced. Find the corresponding side in the same manner. Insert pegs and lay the lines. Lines, Box; B, beds; W, walks; V, vase. — M. O'Donnell, *Gardener to E. Leeming, Esq., Spring Grove, Richmond.*

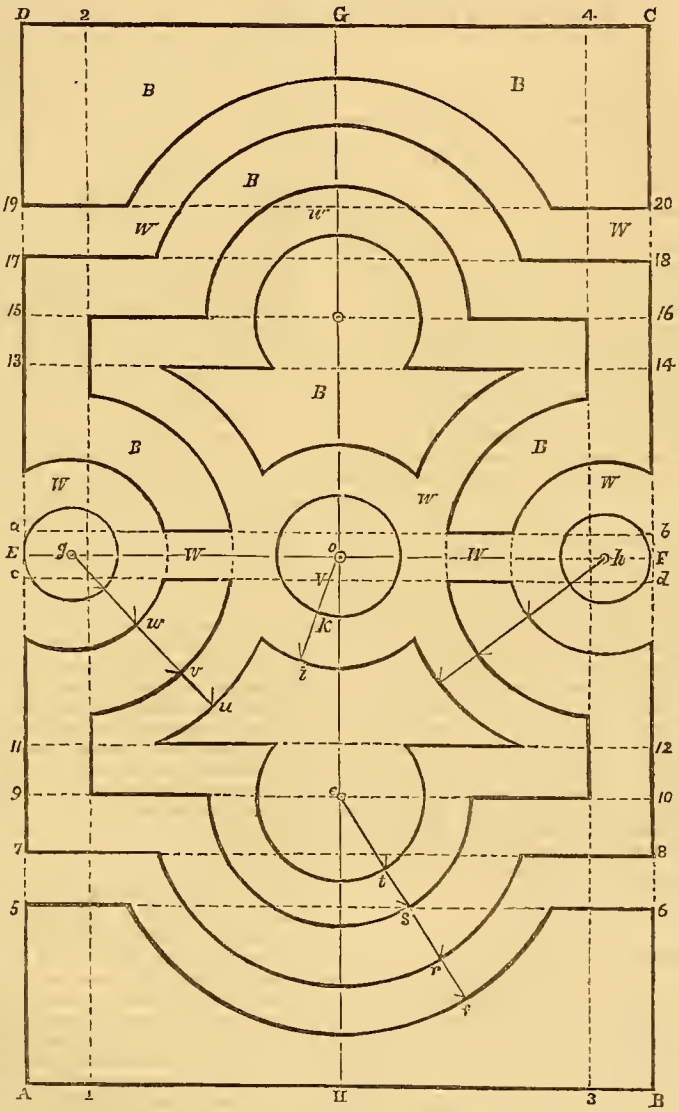


Fig. 38. Scale 16 feet to the inch.

RED-LEADING SEEDS—RATS AND MICE.

I have been much interested in the communications which have from time to time appeared on the subject of red-leading seeds with the view of saving them from the attacks of predatory vermin. Of the value of red lead for coating seeds before sowing, I have long held a high opinion, having for many years found the results of the practice very satisfactory. Circumstances, however, must have altered, for I have of late had many evidences of the non-protective property of red lead. The first instance was last year—whole rows of Peas were cleared at night as cleverly as it could have been done by hand in daylight; the Peas were carried off as soon as sown, and taken some distance away, I presume to be eaten at leisure.

"Ah, but if the rats devour red-leaded Peas it will kill them," some one will say, as I know many have said, "for it is poison." It may have done so in some instances, but in my case it does nothing of the kind. They feed on what they get—finer and heavier specimens of the true Hanoverian rat I have

not seen; indeed, they are fat, sleeky fellows, more like half-grown rabbits than rats.

The Hanoverian rat is a perfect gourmand. Nothing comes amiss—flesh raw or cooked, grain, Peas hard as bullets, and Peas softened by moisture and just sprouting; and his dexterity is shown in ascending Pea sticks, and nibbling off the pods, taking them to a place where he can eat them at leisure. Greens, especially young Cauliflower plants, he eats to the stump, and salads are his delight, Lettuces being cut over as if he were showing how to cut Mustard and Cress. To the juice of the Vine many know to their cost his liking, and to Grapes he is partial; mounting the Vines he makes a point of more than tasting, and generally prefers the Muscats; of the Black Muscat of Alexandria, or Muscat Hamburgh, he is peculiarly fond. Apples and Pears please him well; and Strawberries must have been studied, for Black Princes are passed over, but not so anything with the Queen flavour. Of his cunning I could say much, of his skill more, while his sagacity is great.

Rats and mice have taken the whole of four rows of Peas well red-leaded before sowing, and what is most remarkable have selected for their early depredations the wrinkled Marrows. They evidently know the flavour of Peas, having left early sorts until the last. Tom Thumb under walls, and Dickson's First and Best, they did not touch so long as there was a row of wrinkled Marrows left. Last year, as already stated, they took the Peas as soon as sown, and some of the rats I saw crawling about during the day apparently repenting of what they had eaten in such haste; but this year they wait until the radicle is from 1 to 1½ inch long, and the plumule commencing its upward journey; then, and not till then, do they take the Peas, leaving the outer red-leaded covering behind as evidence of their skill in manipulation, indicating that they know what is injurious to them as well as I do, or, at least, letting me see that they have found out a way of obtaining what they want without partaking of the repast I had provided for them. If I set traps in the rows they take all the Peas except where the traps are, being very careful not to put their feet on the "table." Therefore, the older the wiser they are. The same is true of mice; traps they will not take, and newly red-leaded Peas they will not eat except when the radicle is taking hold of the soil, then they split the Peas.

Against the mice our cat does excellent service, and I have hope, for I occasionally hear an owl. Last summer we had an ally; weasels came to our aid, but by accident they have come to their end, being caught in the traps set not for them but the rats. It was pleasing to see them running about, stopping every now and then to listen, advancing if no noise, retreating if anything betokened danger. It was especially gratifying, for I knew they were enemies of the rat. Weasels and owls are a boon to any gardener. They injure nothing belonging to his charge, and it is a pity we do not find such helpers preserved. Passing over such considerations, however, I have come to the conclusion, that though I have hitherto found red lead a deterrent, it is not infallible against rats and mice. They are too cunning for traps, know how to split Peas, and have proved proof against poison so called, eating enough to kill all there were. But still, on they come. Query, Is there any poison rats and mice will take when food is plentiful and when it is scarce? The chemist must tell.—G. Abbey.

VERONICA CHAMÆDRYS.

I think that this is a charming British plant, and as far as I can see, the whole family of Veronica are inclined to give us something in the way of variegation. I have four varieties of Veronica Chamædrys—namely, three Kentish, and one which I found in Buckinghamshire last autumn. Two of the varieties from Kent are inconstant, but one of a self colour—of a creamy yellow tint—is very pretty in the spring, and I think it is the most striking of the variegated forms of Veronica Chamædrys. It is of the easiest propagation, and is at its best in March and April. When better known this plant must become a favourite. Cuttings taken in November, seven or eight of them placed in a 48-sized flower pot, struck in a cold frame, and planted out entire in February, will make a very attractive edging for a spring flower border, or may be planted out in patches in the mixed herbaceous border. This Veronica loses its variegation during the summer, but regains it during the autumn and winter. There is also a very pretty white-margined variety in the nursery trade, but in the mass the self-coloured kind beats it by far, particularly at a short distance.

I hope young gardeners will study British botany when they are out on their evening walks. There is nothing very difficult about it. Collect, name, and mount, say, two hundred species during each season; for a beginner dried plants are much better to refer to than trusting to memory or even coloured engravings, for good engravings, well coloured, are very expensive, and generally out of the reach of the ordinary run of young gardeners. —W. E.

HOP CULTIVATION FOR ORNAMENT AND USE.

No. 4.

The antidote to the mildew was parent to one for the aphis. An active body of intelligent and wealthy individuals like the Hop-growers, were not likely to sit down quietly and see their hopes blighted year after year; and as they had by dint of perseverance gained their point with the Chancellor of the Exchequer in freeing Hops from the imposts of the Excise, they tried to obtain tobacco duty free for the purpose of destroying green fly, and to a certain extent succeeded. In the meantime, however, the spirit of inquiry was aroused, and experiments were made. Soft soap was a likely ingredient to be distasteful to the aphis, if not fatal to it, and trial was made by mixing it with tobacco; the result being satisfactory, smaller quantities of the dearer article were used, until it was found that soft soap alone answered the purpose, and as the duty-free tobacco did not act well as an addition to the soft soap, and was still more inconvenient when employed alone, its use has been in a great measure abandoned. The demand for soft soap, especially in 1869, was so great that it is not unlikely to influence the price in future years; thousands of casks of it were used and with good results, for, as a Hop-grower justly observed to me many years ago, that if he did not save his crop the season he dressed his plants, still by keeping them healthy he felt he was doing his best to secure a crop in the next year, and this has often been the case. Timely and judicious washings, however, have not unfrequently been rewarded with a fair crop the same season, where, in the absence of such measures, a total blank would have been the result.

I have stated that a season rarely occurs in which the aphis does not make its appearance more or less; if the insects are only in moderate numbers and the ladybirds are about, the grower is satisfied, provided the plant pushes on in its growth; nevertheless, he watches them daily. Taking off a leaf one day he counts, perhaps, thirty lice on it, and on traversing his grounds he finds that number about equal to the average. The next day he repeats his visit of inspection, and finds he can on an average count ten more enemies on each leaf than he did on the previous day, and probably another day brings another increase—he becomes uneasy, goes home, consults his barometer, and looks at the sky to see if there is any prospect of a thunderstorm, and very likely consults an old servant who has the reputation of being a good judge of the coming weather; but if there is no hope of thunder, which is a great preventive of insect depredations, he seriously prepares for the washing. The materials he has by him. Some of the soft soap is boiled in an extemporised copper, for it will not readily mix with cold water, although the latter is used to dilute it afterwards. The strength of the mixture is generally 10 lbs. of soft soap to 100 gallons of water. Engines somewhat resembling a small fire-engine have been manufactured for the purpose, the most common being made with two injection points, with a few feet of flexible hose to each, and one working handle. One man works the latter while other two guide the discharge. The machine being on wheels and having to be moved very often, other men carry the liquid to it in pails from some supply near at hand. Of course, the men are directed to syringe only the plants that are affected, and they quickly get into the way of discerning those attacked. The consumption of soft soap on a dozen acres is considerable, especially as the washing is generally repeated once or oftener; nevertheless, the good effects of the application are so generally admitted, that its use is all but general. Those not employing soft soap do not deny its utility, but are simply deterred on the score of expense, or it may be in a very few instances from prejudice.

Having described the mode adopted to combat the aphis scourge, I now come to a not-less serious evil—the *Mildew* or *Mould*, which, unlike the aphis, is much more difficult to encounter, and in its visitations is both partial and mysterious; one Hop garden may be attacked with it, so that not a single Hop will be worth picking, while another but a very short distance off will not be affected; and yet both may have been alike in every respect as regards site, cultivation, and other conditions. Some grounds have been affected with mildew for

several years in succession. It is also more injurious to the cultivator than the aphis, for while the latter lessens the crop, it often happens that what is produced is of good quality, and commands a fair price, but buyers will not look at a sample that has been mouldy.

Moist warm seasons are said to encourage mould, and some varieties of Hops are more liable to it than others, the Golding, the most valuable Hop, being most so of any; and well-cultivated grounds are as liable to suffer as those which are not so. Remedial measures have been adopted of late years, and although it is too much to say the disease is entirely preventible, it is in a great measure so, and the acreage that has been affected to a serious extent during the last three or four years is certainly smaller than it used to be twelve or fifteen years ago. There is reason to infer that the measures adopted to arrest the progress of the disease have done much good. The modes of doing this have certainly been less varied than those adopted with the aphis, for sulphur is used now as it was twenty years ago, but the mode of applying it has been improved, and sulphurators are amongst the implements met with at agricultural shows in the Hop districts. The most approved are strong and heavy, requiring a horse to draw them along the alleys between the Hops; the movement given to the wheels turns the machinery, which is very much like that of an ordinary corn-winnowing machine, only instead of the sulphur being blown out at one end as it is in the winnower, it is blown straight upwards in the sulphurator (flour brimstone or sulphur vivum is used), the feeder being at another place. A boy leads the horse, and a man behind, protected by suitable clothing, guides the machine, a cloud of sulphur falling on the foliage all round, and a considerable share on the man who guides the apparatus; but so beneficial are the results that most large growers apply sulphur prior to the time mould is expected, and there is little doubt that as a preventive it is of great value.—J. Robson.

THE CUCUMBER DISEASE.

After having had my share of the Cucumber disease, and confessing my perfect ignorance of the cause or cure, I regret to find that some of the best Cucumber growers in the country have been baffled with this disease for several years, and, like myself, are as ignorant of the cause as ever. I could do nothing by way of remedy, except by sowing and planting often, for by the time a few fruit were produced the disease would appear, and then no treatment was of any use.

I have had several applications for a remedy. Sorry I am to repeat what I have frequently stated—that I know of none, and but one alleviation, and that is frequent planting. I have many suggestions before me as to change of seed and soil, composts, temperature, air-giving, watering, &c. All I will say is, that it is proper to try every means; but I tried all, and all were in vain. I had seed from all parts of the country; I had maiden loams and soils of all kinds, including heath soil pure and unmixed, and all conceivable mixtures of the same; and whether in a pit heated by hot water or in a dung-bed frame, in ridges under hand-lights, or in the open garden without anything, just when the plants began to fruit the spot on the leaf, and sometimes a gummy exudation from the fruit, would appear, and then all was about over. That I am not troubled with the disease at present is no merit on my part. There are old friends of mine, one of whom I have noticed years ago in this Journal as perhaps one of the most successful Cucumber growers I ever met with, who have been plagued with the disease for several years, whilst neighbours are perfectly free from the disease whether they plant in a house, frame, or ridge.

I have several times alluded to this perplexing subject, and I would not have done so at present but for the fact that the disease is making some good gardeners uncomfortable with their employers, who ascribe the failure to want of skill and attention. Although everything possible should be done and tried, still, were I at liberty to give the names of successful Cucumber growers who have suffered from the disease, and feeling my own inability after many experiments to find out the cause or cure, I hope that employers will be inclined to sympathise with their gardeners on this subject, and not make it a source of more unpleasantness than they already feel. Some of the most successful Cucumber growers made light of the disease until their turn came. One of them last season found that in a fine span-roofed house heated by hot water, in a lean-to heated by a flue, in a brick pit with fermenting material beneath the soil, in a ridge under hand-lights, in the open ground without anything, and also in the open air with the plants trained against a wall—anywhere and everywhere—the disease showed itself; and after trying every mode to arrest its progress he felt himself powerless. I should, therefore, feel sorry if any good gardener were rendered uncomfortable and obliged to leave his situation because he could not conquer this disease, for as yet, from the highest to the lowest, we know nothing at all about it. That is a good reason for finding a remedy, but it is no reason why those who are suffering under the misfortune should be unduly depressed. The same principle would have applied to the Potato disease, only so far, unfortunately, that was more general than the Cucumber malady. It will be of no use for those who have never had their Cucumbers diseased to give their opinions and speculations. I used to have much of such well-meant kindly help, but it was of no use, as some of my advisers found to their cost before many months were over. The great thing is to find out from those who have been tried something like cause and effect, malady and cure.—R. Fish.

ROYAL BOTANIC SOCIETY'S SPRING SHOW.

This Show commenced yesterday on a day which offered a cheerful contrast both in its warmth and brightness to those which we have so long experienced; and the exhibition which will close this evening is not less bright than was the opening day. Roses form its principal feature, and when we say that the principal exhibitors are Mr. Turner, of Slough, Messrs. Paul & Son, Mr. W. Paul, and Messrs. Veitch, these names will be sufficient guarantee for the excellence of the specimens placed before the public. Mr. Turner is first and Messrs. Paul & Son second for nine, and in the collection of the latter is a magnificent specimen of Madame de St. Joseph, which was awarded a special certificate for excellence of cultivation. Extra prizes were given to Mr. W. Paul and Messrs. Veitch for their extensive and beautifully bloomed collections. Among amateurs the prizetakers are Mr. Baxter and Mr. James. The latter also shows fine examples of Amaryllis, including the varieties sent by him last week to Kensington.

Azaleas are shown in excellent bloom by Messrs. Lane, and we particularly noticed Minerva, a free-flowering orange scarlet, and Princess Alice, pure white. A first prize was awarded to Messrs. Lane, the second going to Mr. G. Wheeler, gardener to Sir F. Goldsmid, Bart., the former exhibitors being also first for twelve compact finely-flowered Rhododendrons, for six plants of Deutzia gracilis in excellent bloom, and for a collection of forced hardy shrubs, consisting of Rhododendrons, Azalea pontica, and Deutzia.

The best collection of hardy herbaceous plants in flower comes from Mr. Ware, of Tottenham, who has the lilac-flowered variety of Primula cortusoides blooming very freely, double Wallflowers, Dielytra spectabilis, Spiræa japonica, Lily of the Valley of the ordinary and variegated kinds, and Triteleia uniflora well bloomed. Mr. Wheeler is second. Mr. Ware receives also an extra prize for a collection in which the little heart-leaved white-flowered Smilacina bifolia is very elegant. Dielytras and Lily of the Valley are but of moderate quality. Mr. Wheeler takes a first prize for each, and a second prize for Cinerarias, Mr. James, gardener to W. F. Watson, Esq., Isleworth, being first. A similar award was made to Mr. Goddard, gardener to H. Little, Esq., Twickenham, for well-grown Mignonette, and to Messrs. Paul & Son for cut Roses.

Mr. Wheeler is the only exhibitor of twelve greenhouse plants in flower, and takes a first prize for a collection which does not call for remark, and also obtains extra prizes for fine-foliaged plants and exotic Ferns. Messrs. Lane contribute a large collection of Roses, Azaleas, &c; Messrs. Rollisson, Mr. Williams, and Messrs. A. Henderson, groups of Palms, Orchids, and mixed stove and greenhouse plants; Mr. Goddard and Mr. James, Cyclamens, and the latter an excellent stand of Pansies; Messrs. Carter & Co. baskets of their new Tricolor and Bronze Pelargoniums; and Mr. Needle the collection of Orchids and Ophrys shown last week at Kensington. For all the above extra prizes were given.

Botanical certificates were awarded to Messrs. Veitch for Acer polymorphum palmatifidum, with beautifully cut bright green foliage, and very elegant in its appearance; to Messrs. A. Henderson & Co. for Malortica speciosa; to Messrs. Rollisson for Euterpe antioquensis, a graceful slender-leaved Palm suitable for dinner-table decoration; and to the same firm for Tillandsia argentea, with narrow greyish leaves, a rather graceful-looking plant. A floral certificate was given to Mr. Williams for an Amaryllis called hybrida gigantea, with white flowers feathered with crimson, and said to be a hybrid between an Amaryllis and Lilium giganteum, the flowers having long slender tubes like the latter, but it has been suggested that it is more likely to be a hybrid between Amaryllis vittata and solandriflora. Mr. Little also received a floral certificate for his fine white Cyclamen Snowflake.

GLADIOLI.

How well I remember years ago being the first to introduce these lovely bulbs into the neighbourhood in which I then resided—the intense interest with which I watched the first break of the green spike through the ground—how spasmodic was their arrival—how I despaired in many instances of their appearing at all, and with what joy I welcomed their advent when I had finally abandoned all hope!

I may, perhaps, be permitted to tell how I treated them, as I certainly was eminently successful in growing them. They were planted in March, in one of the circular beds on the lawn, in a rich compost of light sandy loam mixed with thoroughly decayed horsedung, the whole well sifted through an ordinary gardener's sieve. They were then planted about 3 inches, or rather less, beneath the soil, and 8 inches apart; but I believe their success was mainly attributable to their being watered twice a-week with the diluted sewage from a cesspool. Certainly I have never seen the Gladiolus attain such a size either as to the stalk or bulb, and I did not follow the usual course now adopted of taking them up in the autumn, but I covered the bed with a coating of leaves 6 or 8 inches thick. I never lost a single bulb, and what giants they were! Eventually they became so numerous that I was compelled to take them up and divide them.

I have lately been shown Appleby's fumigator. What a boon it is to the gardener! What a saving of time, of health, and of inconvenience!—Hortator.

PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

Costus Malortieanus (Malortian Costus). *Nat. ord.*, Scitamnaceæ. *Linn.*, Monandria Monogynia.—Native of northern Costa Rica. Flowers yellow, striped with scarlet.—(*Bot. Mag.*, *t.* 5894.)

Gilia liniflora (Flax-flowered Gilia). *Nat. ord.*, Polemoniaceæ. *Linn.*, Pentandria Monogynia.—Hardy annual, introduced by Mr. W. Thompson, Ipswich. Native of California. Flowers white.—(*Ibid.*, *t.* 5895.)

Nothoscordum aureum (Golden-flowered Nothoscordum). *Nat. ord.*, Liliaceæ. *Linn.*, Hexandria Monogynia.—Native of California. Flowers yellow.—(*Ibid.*, *t.* 5896.)

Begonia crinita (Slender-haired Begonia). *Nat. ord.*, Begoniaceæ. *Linn.*, Moncœcia Polyandria.—Native of the Bolivian Andes, South America. Introduced by Messrs. Veitch. Flowers pale rose.—(*Ibid.*, *t.* 5897.)

Chlorocodon Whitei (Mr. White's Chlorocodon). *Nat. ord.*, Asclepiadaceæ. *Linn.*, Pentandria Digynia.—Native of Natal, where it is called "Mundi-root." A lofty climber.—(*Ibid.*, *t.* 5898.)

Azalea indica varieties.—"*Fanny Tillery* was obtained at Welbeck as a sport from the variety called Triomphe de Gand. The other, *Acme*, is, we believe, a seedling. The raising of seedlings is very interesting, but with the greatest care and judgment in selecting the parents, it is a lottery with a great number of blanks to one prize. Mr. Kinghorn, whose name is so intimately associated with these plants, informs us that he finds in his own experience 'that it is of the first importance to select as the seed-bearing parent one that has attained every point of excellence, particularly form and substance of bloom, and a good habit of growth; while in the pollen-bearing or male parent it is equally important to choose one that has some desirable quality of colour or marking.

"*Fanny Tillery* is, as we have just said, a sport from that called Triomphe de Gand, obtained some three or four years since by Mr. Tillery of Welbeck. It has, we hear, a strong healthy habit, and is a profuse bloomer, the flowers keeping perfectly true as to colour and marking. 'None of the variegated section which I have seen,' observes its fortunate possessor, 'equals it for bright colour and effect.' The flowers are of average size, of a bright rosy-pink colour, the upper segments richly spotted with deep crimson, sometimes nearly over the whole surface of the central one, and the edge being of a pure white breaking inwards in an irregularly feathered manner. The flowers which were sent to Mr. Fitch were six-lobed. Its bright and showy character places it in the first rank in the variegated group, and we believe it will be found to be the best of its class; certainly it is a very fine and valuable Azalea.

"*Acme*, the second variety for which we are indebted to Messrs. Veitch & Sons of Chelsea, is a self-coloured Azalea of good quality, and is remarkable for the great substance of its blossoms, and for its rich deep rosy-crimson colour, a peculiar tint which we have not seen in any other variety."—(*Florist and Pomologist*, 3 s., iv., 73.)

NOTES ON A FEW FINE BEDDING PLANTS.

Ageratum Imperial Blue.—Lively lavender, with more of a dash of blue in it than has the real lavender colour, which renders it more lively and effective; 8 inches high. Produces its immense bunches of flowers in the greatest possible profusion—so much so, that it covers a bed with a perfect sheet of its pleasing colour. It is a most valuable plant for masses, scroll-work, edgings, and for forming ground-work in panel-planting, or for pincushion beds. Since the introduction of Lobelia Erinus speciosa and Gazania splendens into our parterres, we know of no other plant so serviceable as this. It deserves more said in its favour than was said of it when brought before the public; and the coloured plates we have seen of it do not do it justice, and this is not generally applicable to new plants.

Heliotrope Surprise.—What Imperial Blue is among Agertums this is among Heliotropes. A lively purplish blue. Grows about 9 inches high, and having a first-rate habit. In some localities, where for the last few years purple Verbenas have, owing to the drought, not been satisfactory, it has been decided to substitute this Heliotrope, the effect produced being similar. This may apply most to dry soils.

Iresine Lindenii.—This is a very decided improvement on I. Herbstii, being of a brighter colour and much better habit; less lumpy and ungraceful-like, from its being dwarfer, more twiggy in growth, and from the more pleasing outline in shape of its leaves, which are acuminate or taper-pointed. When sent out, we got a character with it of much more hardiness than I. Herbstii; we think it slightly more hardy, but not much. It has the same liking for moisture and rich soil, is as easily propagated, requires intermediate heat to keep it safely over the winter, and tobacco-smoke to keep it free from green-fly. More than likely it will supersede I. Herbstii. It bears pinching well for edging, and for dotting in light groundwork of such as Pyrethrum Golden Feather (a most useful plant, likely in great measure to cause a decrease in the number of Cloth-of-Gold and Golden Chain Pelargoniums) and Alyssum variegatum, &c. Excellent also for contrasting-lines to yellow Calceolarias, Centaurea ragusina, Cineraria maritima, and C. acanthifolia.

Cineraria acanthifolia.—The same beautiful silvery whiteness as C. maritima. Fully more compact in growth, the leaves being in shape intermediate between C. maritima and Centaurea ragusina. Grown with a stem a foot high, this is a very handsome plant, beautiful either for panel-plants or for dotting. To some extent this should supersede the Centaurea, being much more easily wintered, and quite as if not a more handsome plant. It is an excellent dinner-table plant. In hardiness it is the same as C. maritima, but we have not found it so easily propagated. It can be raised easily from seed, but, like its companion, we suppose it will scarcely attain its full coat of silveriness the first year. We have not yet had experience of it from seed.

Senecio argenteus.—From what we have already seen of this plant, we regard it as the finest silvery-foliaged plant for general usefulness out-doors that has ever been introduced. When it can be said of it that it is a hardy perennial, and a miniature, as nearly as possible, of Centaurea ragusina, forming lovely compact specimens 6 inches across, with compact stiff leaves as white as those of the Centaurea, and like them in all respects except size, little more need be said in its favour. It was brought from the Pyrenees by Messrs. Backhouse, of York, who sent a special expedition for it, and who seem to think it does best in loamy soil, though it grows wild in a loose shaley soil. It multiplies itself by its "woody stem branching and rooting as it travels on." At present our stock of it is in pots, and from what can be seen of it in that state, and from what we have heard of it out-doors much farther north, it cannot fail to be a great favourite.

Pelargonium Vesuvius.—Brilliant scarlet; flowers produced in largish trusses in wonderful profusion. Habit compact and dwarf; lively green leaves slightly zoned. We regard this, from our experience of it in two different soils and localities, as, taken as a whole, the most useful Pelargonium that ever came under our notice. It has not a fault that can be named. It is brilliant, free in growth, and for keeping up a continuous profusion of telling blooms we have seen nothing in the Pelargonium way to equal it for bedding. It is excellent for pot-culture, and in intermediate heat blooms profusely all the dull months of winter. At present we have a quantity of it in a temperature of 55° to 60°, that were lifted out of the beds in October, and since the middle of November they have been studded with bold trusses of bloom; and this in the case of plants that were late in September denuded of every growth that would make a cutting. The more vigorously it grows, the more blooms are produced.

Pelargonium Glorious.—This for beds is second only to Vesuvius. It is more of a crimson scarlet, and not so lively

a colour for distant effect, but in all other respects it is the equal of Vesuvius.

Pelargonium Grand Duke.—This well deserves its name as a pot plant, in which condition only have we yet proved it; but we have its character from a reliable friend in the midland counties of England as one of the most effective of beddere. It belongs to the Nosegay section, and has immense trusses of orange-scarlet blooms on very stout footstalks. Habit compact.

Pelargonium Fire-King.—Bright scarlet. Immense truss; free and fine bedder.

Pelargonium Lucius.—Very bright rose; very large trusses in great profusion. We have not proved this variety on an extensive scale, but from what we saw of it last season, and heard of it at Kew and in the midland counties, it must prove to be the finest of all our rose-coloured bedders, and in a pot it is splendid.

Pelargonium Jean Sisley.—This is a fine zonal variety, its form and substance being much like Lord Derby, with a richer colour. Much is expected of this variety.

Pelargoniums Bayard, William Thomson, Douglas Pearson, and Dr. Murat.—These are crimson varieties, of which we think very highly as bedders, more especially the two first-named, which are both excellent in habit, having immense trusses produced very abundantly. Bayard's character is well established, and William Thomson, though we had only two plants of it planted out this year, we think quite equal to it.

Pelargonium Blue Bell.—Bluish-lilac; very pleasing colour; large truss; moderately-profuse bloomer; well worth growing in beds on account of its lively colour. Should be plunged in 6-inch pots, when it flowers more freely. Fine pot variety and late winter bloomer.

Pelargonium Maid of Kent.—We have not proved this variety, but from reliable authority learn that it has been superior to Christine—to which class it belongs—in England these last dry summers. It has not run so much to seed as Christine; but for wet seasons and northern districts we suspect Christine is not easily conquered.

From among numerous varieties we have selected several other sorts, of which we prefer not to speak confidently at present.

Growers who do not possess Glow and Violet Hill, the former a scarlet, the latter a dwarf rose-colour, should add them to their collections. Glow is a very fine bedder, and Violet Hill the best dwarf rose we have ever seen.—D. T.—(*The Gardener.*)

A LARGE GRAPE HOUSE.

Many years ago, when on a visit to Liverpool, I went through the far-famed Grape houses of Mr. Meredith, of Garston, and I was astonished at the size of two span-roofed vineries each 144 feet long by 32 wide, but a subsequent visit has revealed the fact that even these large houses have been eclipsed by still larger ones erected near them. We now and then hear of orchard houses of unusual size being put up, but not many days ago I accidentally discovered a glass house intended for a vinery of which the dimensions exceeded those of all that I had previously seen, although I cannot affirm there may not be larger. It is 385 feet long by 16 feet wide, and has recently been erected by an enterprising gentleman in the suburbs of Maidstone on a piece of ground which apparently had been quarried, and was lying waste. This large glass house, for until it is planted it cannot properly receive a specific name, is a lean-to with a north light, and a low front light also. The main rafter of the lean-to is of great length, owing to the steep descent of the ground where the house is built; a row of posts or pillars inside, at intervals of about 8 feet, support the ridge, and the main front roof is fixed. The north lights and front upright ones are moveable for ventilation.

The structure of the house presents nothing peculiar beyond the size and the steepness of the ground on which it is built, the site shelving rapidly to the south. This circumstance, however, tends to increase the size of the house, for the floor, I believe, descends about 3 feet, necessarily increasing the length of Vine-rafter nearly 5 feet, for the roof was of a steep pitch—possibly 50°—giving ample space for the longest stretch of Vine rod that could be desired. The back light is about 4 feet, the front upright light about 2 feet, and both open to admit air. There is nothing peculiar in the glazing; perhaps the squares were larger than some would have recommended, but this is a mere matter of taste. The only drawback to the house presenting a noble appearance was its not being in a straight line, a slight angle of 3° or 4° occurring at about one-third of its length, one portion appearing to be about 250 feet and the other 130 feet, or thereabouts. This deviation from the continuous straight line was, I believe, rendered necessary by the nature of the ground. Another feature in the house was the cheap construction of the back and front walls; the front wall, of course, was on arches, but both were of concrete, formed of the *débris* of the quarry on the site of the house, along with cement, or rather stone lime. The ground having all been quarried, probably rendered it difficult to make a foundation for a brick or stone structure, but it is not unlikely that the same cause may be beneficial to the Vines eventually, and if it ever should happen that one plant did duty for the whole of this house, the advocates of the one-Vine system might have something to point to. As it is, the house presents a noble example of the enterprise of its builder, a Mr. Goodwin, who, I believe, is about building behind it another house of similar dimensions, the rising ground allowing of this without any danger of the border being in the shade. A crop of Cucumbers occupied in the past season the house already built, and I was told the number cut was enormous. Some wires stretched against the back walls were occupied with Cucumbers, as well as the floor of the house, but Vines were about to be planted, and I hope to report favourably on them some day. A vinery 128 yards long without a division is a sight not met with every day.—J. Robson.

NOTES AND GLEANINGS.

Dr. Hooker has just started on a botanical expedition of eight or ten weeks into the interior of Morocco, a hitherto almost untried field. He is accompanied by Mr. R. Ball and one of the gardeners from Kew to assist in collecting plants.—(*Nature.*)

—— The report of the Manchester Field Naturalists' Society for 1870 has, according to the secretary, "little to say except that the year's proceedings have been marked by smoothness and success, with no particular incidents to give it distinction above preceding years, and certainly without any of an infelicitous kind." The meetings have been well attended; there has been a considerable entry of new members; and the treasurer's report is satisfactory. The report is taken up with brief *résumés* of the proceedings at each meeting, and a summary is given of a useful paper by Mr. R. B. Smart "On the Variation of Species" in the vegetable kingdom. We much regret that, from a society numbering its members by hundreds, we cannot obtain a proportionate amount of work; indeed many of the smaller bodies put the field clubs of our large towns to shame in this respect. Mr. Grindon's "Flora of Manchester" is not only out of date, but also out of print; and a complete fauna and flora of the district would be both useful to naturalists and creditable to the society. Surely among so many members some may be found both able and willing to undertake such a work. We observe that the secretary, in the present report, speaks of plants by their English names, some of which are of his own invention. As their scientific equivalents are omitted we are left in the dark as to some of them; "Dimplewort" is, we believe, Cotyledon umbilicus, but "Blushwort" baffles our ingenuity. The president for 1871 is Mr. Thomas Turner, F.L.S., and Mr. Grindon continues to act as secretary.—(*Nature.*)

—— The Tedworth Conservatory.—The late Mr. Assheton Smith was told by medical authorities that his wife must go to Montpellier; he replied, "No, I will bring Montpellier to her." To enable her to have daily exercise in a genial temperature he built the vast conservatory at Tedworth. The cost was very large, and it was stocked with trees and plants that were ever verdant and refreshing; but the current consequent expense was large, so, not being needed by the present possessor, it was put up to public competition by Mr. F. Ellen on Wednesday last, and purchased by Mr. W. Gue, Mayor of Andover, for the sum of 265 guineas.

—— The following are from the American "Gardener's Monthly:"—

Horticulture in Berlin.—It is proposed to hold a grand exhibition at the end of June, in Berlin, open to all the world, similar to those held at Hamburgh and St. Petersburgh a few years ago.

Horticulture in Portugal.—At a meeting held under the anspices of the Royal Portoguese Agricultural Society, at Lisbon, last autumn, Jose Martino Pereira de Lucena Nortrona a Faro, the leading nurseryman of Lisbon, exhibited one hundred and fifty species and varieties of Begonia. This beats Philadelphia collections of this interesting plant.

Hardy Palms.—M. Naudin, at Montpellier, in France, has found Phœnix reclinata withstands the severe weather which sometimes

occurs at that place, making no less than thirty-one species in the open air there.

PHYLLOXERA VASTATRIX, the insect which is so alarming European Vine growers, is said to be an introduction from the United States, but it appears more is laid to its charge than it deserves. Another, Dactylopius longispinis of Targioni, M. Planchon says, is the cause of the "Black evil" (maladie noire) in the Grape Vine.

BOTANY IN AFRICA.—They have a thriving Botanic garden at Natal. Mr. McKean is the director. They have just started a Society of Natural History. Its first publication gives much attention to botany. A new climbing Scrophulariaceous plant, to which order our well-known Maurandya Barclayana belongs, is described in it, under the name of Buttonia natalensis.

THE AMERICAN AREA OF GRAPES has been put at 2,000,000 acres, of which California claims 200,000, or one-tenth of the whole.

STAMENS AND PISTILS OF THE GRAPE VINE. — There are three distinct kinds of flowers on the Grape Vine. Some time since, Dr. Engelman wrote to us to know if any one had ever seen a purely pistillate Grape. He never had. We now think it does not exist. But there are certainly three forms:—First, purely stamінate, in which there are no trace of the ovarium; secondly, small ovaries, with defective stamens, which never produce seeds, though often swelling enough to make small Grapes with no seeds; thirdly, hermaphrodite, which we believe alone produces fruit. We suspect all the male flowers throw their efforts away.

CANNELL'S REGISTERED ECONOMISING BOILER.

THE long sharp weather of last winter, and the immense consumption of fuel to keep up the necessary temperature to preserve my plants, caused me to ponder much about heating our horticultural buildings, and at the same time to see if it was not possible to utilise the great amount of heat which has been up to the present time allowed to escape by the chimney. I determined to put my ideas together, and see if I could not combine all the qualities that a boiler should possess, and the annexed engravings, and the following particulars will show how I have succeeded.

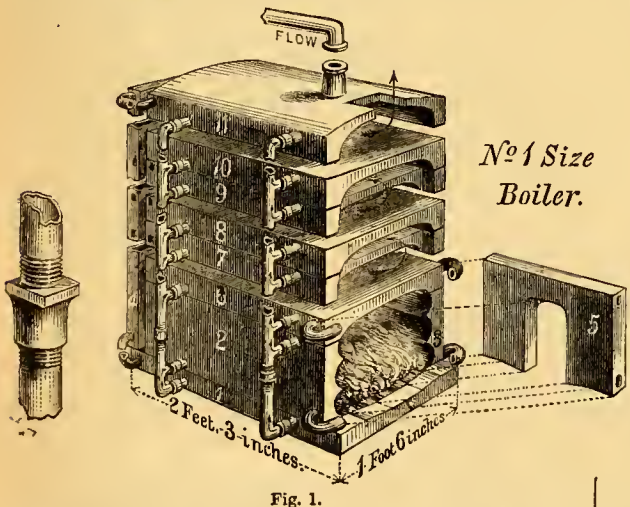


Fig. 1.

The boiler (*fig.* 1) consists of nine or more separate hollow castings, placed one upon another. Upon brickwork is placed the basement or No. 1 casting, consisting of a hollow rectangular frame, into which are fixed eight (more or less, according to the size of boiler) circular hollow fire-bars, placed at such a distance from one another as to allow sufficient space for the draught. At the back or further end of this casting are the return pipes, and in the front the discharge pipe for cleansing the interior of the boiler at any time. The ashpit is formed by the brickwork supporting the first or basement casting, and is enclosed by a door hung on a solid cast-iron frame built into the brickwork or otherwise. The furnace door is to be hung in the same way.

Upon the first casting are placed four other separate hollow castings, of which Nos. 2 and 3, forming the sides of the furnace, are fluted and placed parallel with the hollow fire-bars, and are of such a length that the two remaining castings, Nos. 4 and 5, which form respectively the back and front of the apparatus, may be flush with the ends of the first castings. The back, or No. 4 casting, is large enough to cover the whole or part of the end of the apparatus, and is connected at the bottom by pipes with castings Nos. 2 and 3 respectively, and at the top on each side with casting No 11, which will be afterwards described. The front casting, No. 5, must be of such a height that the top will be level with the top of No. 6, forming the top of the furnace.

The front is built up with brickwork, with three sliding soot doors to allow the flues to be properly cleaned out. This front, or No. 5 casting, is connected at the bottom by pipes with castings Nos. 2 and 3, and at the top on each side with casting No. 6. Upon the top of castings Nos. 2 and 3 is placed a sixth further and separate hollow fluted casting, forming the top of the furnace, having a space left at the back opening upwards, to allow a free passage for the fire to pass out of the furnace under a separate and hollow casting (No. 7), which when fixed forms two flues communicating, by means of other flues formed by similar castings, and terminating in a rectangular opening at the top for regulating the draught, and for the passage of the smoke into the chimney.

The circulation of the water from and into every separate hollow casting is effected by means of four sets of pipes affixed externally to the castings, two sets being placed on each side of the apparatus. If desired the crown or top casting with the flow-pipe can be placed upon No. 2 or 3 casting, and worked without the flues until required. The flame or hot air from the fire placed on the hollow bars will pass between castings Nos. 2 and 3, until it arrives at the opening, described to be left at the back of casting No. 6, where it will divide, and pass upwards towards the front through the two flues formed by casting No 7. It will then return towards the back through the two flues formed by casting No. 8, again uniting and passing upwards into the flues formed by castings Nos. 9 and 10, the heat thus continuing to travel through castings Nos. 9, 10, and 11 in the same way, so that the hot air will pass six times through the internal length of the apparatus before escaping into the chimney.

It will therefore be seen that this boiler is so constructed that all the caloric which the fuel contains is extracted and

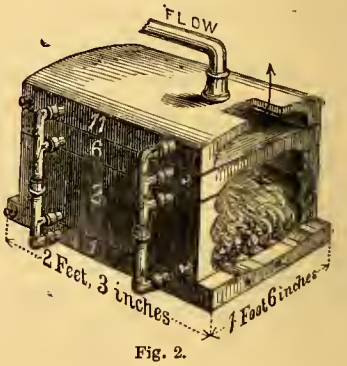


Fig. 2.

conveyed to the water, only just sufficient to take away the smoke being allowed to escape. Any length of flue can be added, or the boiler can be worked without any flue at all; and as the glass houses or buildings are extended so can heating power be added. It requires no brickwork beyond its foundation to form the ash-pit, and a wall round, as in almost all stoke-holes, to form a frontage; the latter can, however, be dispensed with. There are no dead-plates, solid bars, or bricks in this, as in most other boilers, to burn and crack, thereby admitting a quantity of cold air which tends to cool the water instead of heating it.

In order that there may be confidence in a boiler, there must be uniform strength in the castings. It is well known that the more complicated the castings the more difficult is it to procure an equal thickness, while inequality causes unequal expansion and contraction, and occasions fractures and leakages. But in my boiler all the parts are in square sections, and easily cast; consequently a regular thickness can be guaranteed. Any of the compartments can be renewed or replaced without destroying the remaining parts, as the boiler is made in sections, and

is put together with patent joints. All that is necessary is a small spanner, and with this two or three ordinary labourers can dismantle and replace it in a few hours. These joints do away with all fear of fracture from expansion or contraction.

If the damper is carefully worked, it will keep up an intense heat, and the small amount of fuel required will be almost incredible, yet it will be found capable of heating a very large quantity of piping in sharp weather with less waste of heat than any other boiler.

Fig. 1 shows that it can easily be removed from place to place, or a new section put in, so as to be easily converted to any length of pipe.

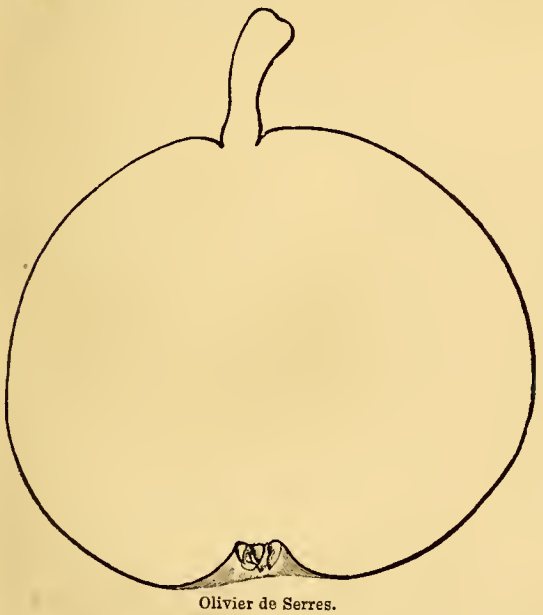
Fig. 2 shows that it can be worked in a similar form to the old saddleback boiler, with the advantage of the hollow bars, and the return flue above, and the two ends can easily be added at any time by simply removing the plugs which connect them with the main part of the boiler.—H. Cannell, F.R.H.S., *Woolwich.*

APRIL PEARS.

I send for your inspection three or four Pears—viz., 1, Olivier de Serres; 2, Fortunée de Printemps; 3, Louise Bonne de Printemps; 4, Bergamotte (Esperen).

No. 1 was raised by M. Boisbunel, and fruited here in 1869. It is a Pear to be depended upon for March and April, as it is a good bearer, is quite hardy, and ripens well. Its flesh is melting, with a fine aroma, and is nearly or quite as good as Winter Nelis in December and January. It was raised from Fortunée de Printemps, or, as we call it, Fortunée.

No. 2, from a wall in the garden of my son at Harlow, ripens in February, and is of most excellent flavour, with an agreeable acidity, very refreshing. The specimen sent is from a pyramid here, and not of so high a flavour.



Olivier de Serres.

No. 3 is a sort raised by M. Boisbunel. It is handsome, and much like its namesake, Louise Bonne d'Avranches, or of Jersey. This sort keeps well till May. It is simply melting or half melting, and sweet without any aroma; it is, however, handsome, and worthy a place in a spring dessert.

No. 4 is a well-known and deservedly-esteemed February Pear. In my cool dry cellar it keeps well all through April. It is the hardiest and most abundant bearer of all our late Pears, and deserves, like No. 1, universal cultivation.—Thos. Rivers.

[The fruit of Olivier de Serres, referred to by Mr. Rivers, is represented in the accompanying figure. Unlike many of the Pears which are recommended for their late keeping, it is one of unusual excellence, and is really worth growing in every collection. Hitherto Beurré de Rance has been the variety on which the maintenance of a late supply depended, but its coarse and frequently gritty flesh contrasts unfavourably with that of Olivier de Serres.

The fruit of Olivier de Serres is of good size, round, and Bergamot-shaped, a little uneven in its outline. Skin entirely covered with cinnamon-coloured russet. Eye rather deeply sunk, rather large, and half open. Stalk short and stout, inserted in a small cavity. Flesh half buttery, sweet, richly flavoured, and with a high perfume of musk or ambergris.

This is a delicious Pear, and unusually richly flavoured for a Pear at this late season. It was raised at Rouen by M. Boisbunel, who has been so successful in adding to the treasures of the fruit garden. The seed from which it sprung was taken from Fortunée d'Angers. The seedling tree first produced fruit in 1861.]

WORK FOR THE WEEK.

KITCHEN GARDEN.

As soon as the principal crops are in the ground, and the supply of dung for the season has been wheeled to the main quarters, proceed to make good any part of the edgings not in order, either (supposing they are Box) by taking the whole up and replanting, or filling up such blanks as may have occurred during the past season. Thrift and similar edgings require taking up and replanting every two or three years. Although Box edgings look neat, and help to set off a kitchen garden, yet as forming a harbour for slugs, &c., and from the annual repair which even with the best care Box always requires, I decidedly prefer stone or earthenware for bordering, for though more expensive in the first place, it will in a few years repay for the additional outlay, besides giving an appearance of stability. After the edgings are put in order turn over or regravel the walks, and after rain let them be well rolled till they again become firm; the garden will then present throughout the season a clean, well-regulated appearance, premising that the quarters as well as the minor paths and alleys are kept in an equally neat state for which purpose place scrapers at each intersection of the paths or walks, or, in fact, wherever they may be necessary. As soon as young *Asparagus* is from 3 to 6 inches high let new plantations be made. Let a sowing of all the winter and spring *Broccoli* be made forthwith. Cape Broccoli and *Cauliflowers* for Michaelmas may, however, be sown a week or two later. Sow *Silver Beet* where it is required. Prick out *Celery* for succession crops, and attend well to the early plants with water, and if they are under glass see that sufficient air is given to keep them stocky. Celery is best kept in a rapid-growing state; the manure should be fat and rich, and there should be plentiful applications of liquid manure, with a small portion of salt dissolved in it. Keep the surface deeply stirred amongst the open rows of Cauliflowers, and look out for slugs; continued hoeing and surface-stirring greatly disturb them, and will now be continually necessary for all advancing crops. Sow successions of Horn *Carrots*—indeed, sow a bed of them every month from January to September. This is the best way to be independent of the grub. The *Carrots*, *Onions*, and *Parsnips*, just coming up may have the teeth of an iron rake passed among them to loosen the surface. Ridge *Cucumbers* should now be forwarded. See that *Capsicum*, *Basil*, Knotted *Marjoram*, *Vegetable Marrows*, and *Tomatoes*, are in a proper state of forwardness for planting out when the time arrives. A few *Kidney Beans* may be sown in a box of sandy soil and placed in a cold pit or other convenient place for protection, to be transplanted after a time.

FRUIT GARDEN.

The disbudding of Peaches and Apricots should be proceeded with; this should never be the work of a second person, but should be put into the hands of one who thoroughly understands the principle on which he works, for it is a delicate operation, and will require all his powers of thought and observation to do it well, and must be carried on through several weeks, even up the final disbudding and thinning. The most expeditious way is to commence from the centre, and take every shoot as it comes, not leaving it till all that is required is done; at that time a quick practised eye accustomed to the work, will see in a moment what to do, so that there need be no hesitation. If any of the early Plums are expanding their blooms, it would be well if a little protection could be afforded them at night for a time.

FLOWER GARDEN.

The continuance of cold drying winds, and occasional bright sunshine, will have been trying to large-sized evergreens that have been recently transplanted, and the attention and expense in watering, &c., which they will have required to carry them safely through, may probably convince many persons of the impropriety of removing large plants in winter or spring.

At all events, those who have an opportunity of judging between September and winter or spring-transplanted shrubs and trees, will agree with me, that early in autumn is the best time for effecting the removal of plants of any size. Nothing but the most careful attention will save those which have been recently transplanted, and besides keeping the roots regularly moist, watering the plants overhead with the garden engine towards evening will be necessary in the case of such as may appear to be suffering from the drying weather, and every plant should be examined daily and carefully, so that nothing may be allowed to suffer through neglect. Take advantage of the present favourable weather for the destruction of weeds, &c., to get shrubbery and herbaceous borders cleaned; indeed, it will be advisable to run the Dutch hoe over them, if merely to lighten the surface. Bedding plants must not be rashly exposed for the present, as the weather we are experiencing would soon effectually dry the tissues of plants which have been growing in a moist rather warm atmosphere. The season is, however, far advanced, and the process of hardening should be commenced as soon as the weather will admit, but for the present shade slightly during bright sunshine, and expose freely to air such plants as are well established, carefully avoiding cold drying currents.

GREENHOUSE AND CONSERVATORY.

Any attention which will serve to prolong the beauty of the Azaleas and New Holland plants, &c., with which the show house should now be gay, will be well bestowed, as when these are over it will in most cases be impossible to furnish the house with equally handsome specimens, and the same variety of colours which these afford. Use shading without loss of time. Also carefully examine the plants on the forenoons of bright days, and see that none of them are suffering from want of water, for with bright sunshine, accompanied with drying winds, it will be no easy matter to properly supply plants with water, particularly specimens which may be rather potbound. In ventilating endeavour, while parching winds prevail, to avoid allowing currents to blow through the house, especially near recently-potted specimens, or plants recently brought from the stove. Take care of the young leaves of Camellias, and apply shading the moment it is perceived to be necessary. Continue to repot, and place the plants in a moist growing temperature as they have done blooming. Use the syringe freely on those in vigorous growth, and assist them with plenty of clear weak manure water; and Azaleas, if at all potbound, will be benefited by similar attention. Orange trees in middling health, which, owing to the neglect they are generally treated with is too commonly the case, will require attention to prevent the young leaves being eaten up by red spider. The readiest and most effectual method of clearing them of this pest is to lay the plants on their sides, and well wash the under parts of the leaves with the engine; but unless the trees are kept in health this will be but a partial cure. Afford them plenty of liquid manure and a moist, somewhat shady situation, and see that the drainage is perfect; also repot when necessary, using a compost of two parts of rather strong, rich, mellow, turfy loam, and one part good, strong, fibrous peat nicely broken up, and well intermixed with clean sharp sand and bones broken small; there will then be no trouble from red spider.

STOVE.

Many of the Orchids being now in active growth will require careful shading, to protect the tender foliage from the direct rays of the sun, and also to keep down the temperature without admitting currents of air, which, during the present state of the weather, would render the atmosphere altogether unsuitable for them. Keep the atmosphere as moist as possible by frequently sprinkling every available surface, and shut up early in the afternoon after syringing, giving the plants a good steaming. The specimens should be individually examined, frequently watering those that require it, and avoiding syringing heavily and promiscuously overhead until the young growths become somewhat firm. Give every necessary attention to soft-wooded plants in free growth, keeping them near the glass and regularly stopped, so as to secure close, compact growths. Also attend to supplying them with plenty of pot room and manure water. Give air freely on every favourable opportunity, but guard against drying currents.—W. Keane.

DOINGS OF THE LAST WEEK.

On the nights of the 6th and 7th we had severe frost for the time of the year, on the former date reaching from 5° to 8° below freezing point, according to the position of the thermometer, and the following night was a few degrees lower in temperature. Fortunately the atmosphere, though clear, was dry, and therefore we think but little injury was done to anything. Apricots and Peaches out of doors appear to be safe, and Peas and Beans seem untouched.

KITCHEN GARDEN.

The figure-4 trap, which we lately described, has caught more sparrows than mice. Though neither of them had formed a hole, both, as well as wood pigeons, had attacked the tops, and of course that, if allowed generally, would affect the early time of blooming. The frosts of the late few days will arrest vegetation, and thus far be useful to late produce. Most of our fresh-planted vegetables, as Cauliflowers and Cabbages, have had a few laurel twigs between the rows, so far protecting them from winds and frosts. The spring-sown Cabbages, owing to the adoption of such means, now look strong and well, and one thing is in their favour, there will be no danger of bolting or throwing up the flower stem. There will, however, with us be no fine cuttings of Cabbages in April and the beginning of May, and therefore Scotch Kale, Brussels Sprouts, and even Sea-kale must be prolonged as far as possible.

Sea-kale.—What we had in-doors has been very good, and that will shortly be cut to pieces and transplanted. The pieces of roots without any crowns proved the best last year, and have now massive heads. This plan, as far as we recollect, was fully explained last season, and is valuable to those with little room, as the roots taken up to force in any dark place with a temperature of from 50° to 60° will, when cut into pieces of 4 inches in length and planted, yield fine plants for forcing in the second autumn after planting. On the whole we prefer every bit of root, if less than the size of the little finger, to the best seedlings, and the trouble is much less. We will have a lot turned out as soon as we can find time. Meanwhile, let us state that the beds out of doors, covered with ashes and a little litter over them, have done very well, yielding strong heads from 6 to 7 inches long—we never wish them longer—and almost as white as driven snow. This plan is an excellent one for those who have not, and care not to go to the expense of pots or boxes. Of course dry earth would answer as well as ashes; but of all earth, peat-moss earth is the best for securing sweet white Sea-kale.

Sea-kale unblanched or partially blanched is very fair, but far from equal to white blanched heads, with just a streak of purple at the points, and therefore to all beginners let us say, that if you resolve to blanch in spring you must cover up as soon as the buds begin to show above ground, as, if these grow an inch or two and acquire the purple colour, no mode of shading afterwards will ever make them white enough to suit one of our first-rate cooks. It is rather a singular fact as regards Sea-kale, but it is no less true, that you cannot make Sea-kale white after it has grown 2 or 3 inches with its natural purple colour. When covered over, therefore, in the open ground, whether by pot, box, ashes, peat, or earth, the covering should be put on early—as soon as the bud shows. An amateur wrote to us lately, that, thanks to us, he had beautiful white Sea-kale from 12 to 14 inches in length! To have choice Sea-kale, 6 inches should be the medium length. If the base should be as thick as your wrist, all the better. Heads half that in diameter, however, are not to be despised, and will be more easily cooked than larger ones. Such heads, after being washed and cooked, should be sent to table as they come from the garden. All cutting and trimming spoils them. We have seen a fine dish of heads 1½ inch in diameter at base and 6 inches in length reduced to a very small affair by nipping out the heart some 2½ inches long. In many cases it would require a whole kitchen garden to yield a supply at that rate. If acres are not to be grown as a supply, let it be clearly understood that the whole, short, stubby head, as sent from the garden, is to be cooked. Just think of a lady taking home a nice stubby dish from Covent Garden, and then having a few little dots sent to her table instead of a dish!

As was stated in an article on Celery, much disappointment is owing to the way in which vegetables are sent to table. We know of a case where a gardener was harassed about the inferior quality of early Potatoes. The cook was spoken to and said she would not trouble, the scullery girl must attend to that. The gardener boiled a dish and showed it, and that ended the matter. Such things, however, are very unpleasant; and to their credit be it spoken, most cooks, male and female, make the most of what is committed to them. Let it be clearly understood, however, that the finest produce may be easily

spoiled in cooking, or presented in infinitesimal quantity when more than enough was sent.

Sea-kale and Asparagus are in our opinion the best of spring vegetables, but in a small garden considerable room must be allotted to them when the gathering is to be continuous day by day. We are no advocates for huge walled-in gardens, but there are comparatively few establishments where the ground allowed for kitchen cropping is ample enough; and one great source of mutual dissatisfaction and discomfort is, that the proprietors of a kitchen garden of an acre or two in extent expect their table to be nearly as amply supplied as that of their neighbour, who gives double or four times the ground for the production of vegetables, and working power in proportion.

We sowed a portion of the Kale, Broccoli, and Savoy seed intended to yield a supply for winter and spring use; also Cauliflowers and Cabbages for succession in summer and autumn, as well as Beet, Salsafy, and Scorzonera for the main supply, and Onions and Carrots to be drawn when young. Early-sown Onions, Carrots, Lettuces, &c., are growing strongly, and we hope we shall have no frost to interfere with them. Early Potatoes that were peeping through the soil have had a little earth thrown over them to keep them from the frost. Potatoes, Radishes, and Carrots under protection were watered with water a little warmed, and first crops of Kidney Beans and successions of Turnips were sown. Of the latter Veitch's Red Globe is a very sweet Turnip, white inside, and stands long before it runs to seed. Very early Turnips are much better of a little protection from frost, as when the young plants are much frosted the check given greatly predisposes them to throw up their seed-stalks, and then the tubers are worthless for the table. It is a common remark that such and such a thing is no better than a Turnip, but a sweet juicy young Turnip is not to be sneezed at. Where wanted very early Turnips should have the protection of glass, and for this purpose the Early Dutch and Snowball are rather the best. When sown in rows there may be rows between of the White Turnip Radish, as for a time it will serve many of the purposes of early small Turnips.

FRUIT GARDEN.

Vineries and Peach houses required a good deal of moisture on the floors, shelves, &c., to counteract the dry cold air when not actually warmed by the sun. Air given early at the top of the house, reducing fire heat as the sun heat increases, and this damping of floors, &c., are better in every way than large openings for air in such weather and much fire heat to make it suitable. Economy and healthy growth greatly depend on the simple circumstance of allowing the heating medium to become cool as the sun gains force and brightness. When much fire heat is used the best mode for supplying the requisite amount of vapour is by having evaporating pans cast on the pipes. In very bright days that would not be so available, as the pipes would be comparatively cool, and therefore damping floors and stages come in as very desirable and useful. There can be no worse plan for giving vapour than sprinkling very hot pipes or flues. The danger will be in exact ratio to the high temperature of the pipes and flues, and the nearness of the plants to the hot vapour thus thrown off. We have used such means in emergencies, but when freely resorted to there is a danger of scorching and scalding, and of weakly instead of robust growth.

The sunny days have been very favourable for giving flavour to Strawberries. In previous volumes we have described various modes of standing the pots so as to get rid of saucers, and the water standing in them. Where the watering can be well attended to we believe there is no plan better than keeping the roots entirely inside the pot, and setting the pot on a hard substance, as a shelf of deal, slate, &c. The plants thrive well and produce good fruit under such treatment, but in bright weather they need watering oftener.

In the *orchard houses* the shutting-up has kept all safe, though the ice was rather thick on the front of the glass. This was assisted, too, by the dryness inside, as, after cleaning and giving the requisite watering, the surface was covered with fresh dry soil. Peaches, Apricots, &c., set best in a rather dry atmosphere. Even here, however, extremes should be avoided, as great continued dryness is apt to starve the delicate parts of fructification, and therefore, in a continuance of such bright sunny weather, though we would not water the dry soil placed on the surface after securing the requisite amount of moisture beneath, we would gently sprinkle it with a misty dew from the syringe, which would soon rise as fine vapour. In some extreme cases we would have no hesitation in gently dewing the blooms in bright weather, but that requires a practised hand at the nozzle end of the syringe, the misty dewing being a very different affair from a forcible application of the syringe. We have known early Peaches much injured from the latter cause when the bloom was fully expanded, before setting had taken place. A little will give strength to the pollen cases and the point of the future young fruit, too much of it and too forcibly given will injure both. The fruit is mostly set thickly in our earliest orchard house, and the bloom is fully developed in the second, but without being set. Out of doors Apricots are for the most part set thickly, and will be secure, except from frost, accompanied by wet, as we have merely protected with laurel twigs. Peaches, too, on walls are safe as yet, though not set but setting. In borders neither Plums, Pears, nor Apples are yet opening, though a very few blooms of Cherries have done so. In lower warmer positions the bloom is, no doubt, earlier.

We find in the case of some bush fruit trees the truth of the old adage, "Heavy crops of fruit one year, followed with wood growth the next year." On the whole, the trees look well for bloom, but some that bore very heavy crops last year, and which were not thinned as they ought to have been, are showing comparatively little blossom this year. Some good Plum bushes in pots that bore too heavy crops last season in the orchard house, showed so little bloom that we plunged them out of doors. We have no doubt they will be well stored with fruit buds next year. They will require but little trouble out of doors in comparison with what they would do in-doors. We have had to take out little in this way hitherto, and we could spare them well, as the plants were becoming too crowded; but we mention the matter more particularly in order to advise those who thus like to grow fruit trees in orchard houses to have a few more than are actually wanted. For instance, if they have room for a dozen, let them have thirteen or fourteen plants, so as to be able to select the best for inside treatment.

ORNAMENTAL DEPARTMENT.

We proceeded with out-door work, and getting empty beds turned over in this fine weather. We hope that there will be heavy warm April rains, otherwise we shall be in a sad plight for water in this district. Means are being taken here to save much more of what falls from the heavens. We continued potting, cutting-making, and hardening-off; we likewise planted out Calceolarias in temporary beds with a little protection. With us most plants which make fibrous roots are never potted; they are struck and stand thickly in wooden boxes, and then transferred to these temporary beds, and, when strong plants, are taken up with balls. If we can obtain it, we work a little rough leaf mould and sandy loam amongst the roots, and these cling to the soil at planting time. The Geraniums put singly in pieces of turf, as previously detailed, are now making a network of fine roots outside the turf, and we fear will need moving before planting-out time. Camellias done blooming we shall endeavour to place under the shade of Vines for a time, to make growth and set their buds, as then they will bloom early without any forcing. Azaleas we would treat the same, so as to secure early growth and early setting of the buds, as then they force early with little trouble. For late blooming they do not much require any such treatment, but for early blooming this early growth is essential to success.

These matters are apt to be overlooked by the owners of one house, where the plants must be grown as well as bloomed. In such a case all that can be done is to set plants in groups, and by regulating moisture and air, make their treatment somewhat different. It is very common to hear the complaint made, "My conservatory is about the same size as that of Mr. H., but mine is seldom so gay as his." The complainant chooses to forget that his conservatory is his only plant house, and a bad one too, whilst his friend H. has several little houses, whose chief duty it is to provide for the conservatory. To expect equal results under such circumstances is quite out of the question. A house to be always gay must have supply houses and pits for growing, blooming, taking out, and taking back. Our gardening writers too much overlook such things, and much unpleasantness is the consequence. We once, to our mortification, heard a lady upbraid her gardener in a public show-room, and repeatedly inquire why her plants were not of so good kinds as those of a neighbour. The gardener, perhaps prudently, pocketed the affront, merely stating there was no secret as to the reason, and that night gave notice, and soon had a place worthy of his talents. He might have told her publicly, in reply to her frequent "Why is it?" that she would do nothing to make the tumble-down houses wind or rainproof; and whilst the owner of the superior kinds of plants had

bought all the best plants sent out every year, she had never spent a single penny except on the mere wages of labour.

Winter-blooming Heaths pruned pretty freely will be benefited by being kept in a cold pit rather close and warm until the young shoots are progressing freely, when the plants must have more air to escape mildew and secure robust growth. Epacrises may be treated in the same way, but they will bear more heat and rather more shade to induce them to break freely. Care should be taken not to prune too far back; only the shoots of last year should be cut back. When once the young shoots are made, expose them well to sun and air to ripen the wood and set the buds, preventing the pot at the same time from being too much heated. We potted Caladiums, Gesneras, &c., and set them under the shade of Vines.—R. F.

TRADE CATALOGUE RECEIVED.

William Paul, Waltham Cross, London, N.—*Spring Catalogue*, 1871. *New Roses, Pelargoniums, Camellias, &c.*

TO CORRESPONDENTS.

*** We request that no one will write privately to any of the correspondents of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By doing so they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely to The Editors of the Journal of Horticulture, &c.*, 171, *Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

Wages Insufficient (*A Head Gardener*).—If they are not enough to sustain you and your family, then leave. Avoid any proceeding such as you intimate. What Chantrey said (and he could remember when he mowed an acre a-day to obtain a livelihood), is quite applicable to gardening and gardeners—"A breach of truth or a subterfuge is not to be endured amongst men who illustrate the beautiful and the pure."

Poor Man's Pipe (*J. B.*).—This is the name in Lancashire of the Datura Stramonium, or Thorn Apple. The seed is smoked by those who are asthmatical or otherwise troubled by breathing with difficulty. It is a native plant, and the seed may be sown now.

Rhododendron Show at the Royal Horticultural Society's Gardens (*J. N.*).—It will be held in June, but the date of opening will in a great measure depend on the forwardness of the plants for blooming. It lasts several days, and will be advertised in due time.

Sidney Seed-sower (*Inquirer*).—We have used this extensively and found it the best sower either in drills or broadcast that we ever employed. An alteration in the slide has removed the objection you mention, that it would not sow Peas.

Thrips on Azaleas (*A Constant Reader*).—You can do little with Azaleas as respects thrips whilst they are in flower, except sponging the leaves with weak tobacco or glue water. When out of bloom smoke with tobacco, and use clear soot water freely, with a close moist atmosphere.

Palms (*G. W. T.*).—There is no such book as you mention.

Various (*F. G.*).—Auriculas and almost all kinds of flowers may be dried, and then gummed in books, but glue is better. The flowers should be gathered when thoroughly dry, placed between sheets of blotting paper, and every day be changed to fresh dry sheets. They will need pressure to keep them firm. This should be continued until they are thoroughly dried, and they may then be placed in the book or on separate sheets of paper. Magnolia grandiflora, 5 feet high in pots, is too small to flower. Turn the plants out in a sheltered situation out of doors, and they will flower in due time. If your situation is exposed, plant against a wall with a south or south-west aspect. The ground should be well drained. Poinciana Gilliesii is only hardy in warm situations far south. A wall with a south or south-west aspect is required. We do not think Magnolia glauca could be grown in large pots so as to flower satisfactorily. Plant it out in a situation sheltered from strong winds, and it will thrive. We do not perceive the propriety of dwarfing such subjects as these. Eurya latifolia variegata, so far as we know, has not flowered in this country. It is one of the finest nearly hardy evergreen variegated shrubs.

Hyacinths in the Open Ground (*P. R.*).—The spikes have no doubt been eaten off by the larvæ of some insect, probably wireworms, which are uncommonly active this season. Place a few pieces of Carrots in the soil about an inch deep, and examine them daily for a time, and afterwards at longer intervals. You may thereby clear away a great many. They will be found eating into the baits.

Queen Victoria Grape (*F. Townsend*).—The Queen Victoria Grape is the same as Victoria Hamburgh, which is a synonyme of Frankenthal. The bunches and berries are large and black.

Grape for Inarching on Barbarossa (*A. J.*).—Barbarossa (Gros Guillaume) is a strong grower and makes a good stock for almost all the late kinds. It answers well as a stock for Alicante, Lady Downe's, and the Muscats.

Aucubas Impregnated—Peach Tree attacked with Red Spider (*W. H. S.*).—It is not unusual for them to be naturally impregnated. The male plant near the female is sufficient to account for it. It is now too late to dress the Peach tree liable to be attacked by red spider with any composition as a preventive, but we would after May syringe forcibly on the evenings of hot days, and give copious supplies of water at the roots in dry weather, continuing to do so till the fruit takes its second swelling. If red spider attack it, syringe the tree, so as to wet both sides of every leaf, with a solution of 2 ozs. of soft soap to the gallon of water. The watering and syringing will improve the health of the tree, and improve the size and quality of the fruit.

Plants for a Conservatory (*A. P.*).—We presume you wish for plants not only for summer, but also autumn, winter, and spring; we shall therefore name some of the most desirable plants for a greenhouse or conservatory, such as we have in ours found the most free both in growth and flowering. Acacia armata, pulchella, oleifolia elegans, Drummondi, and longiflora magnifica; Acrophyllum venosum, Beaufortia splendens, Cassia corymbosa, Chorozema cordatum splendens, Citrus japonica, Correa Brilliant, Cytisus racemosus, Eutaxia floribunda, Kalosanthes coccinea superba, K. miniata grandiflora, Lilium auratum, L. lancifolium, Libonia floribunda, Myrtus communis, M. communis augustifolia, Nerium rubrum plenum, Polygala Dalmaisiana, Rhododendron jasminiflorum, R. Princess Royal, R. Princess Alexandra, and Vallota purpurea. Camellias Alba plena, Fimbriata, Bonomiana, Bealii (Leeana superbs), La Pace, Leopold I., Mathotiana, Mrs. Cope, Storyi, Valtevaredo, Wilderi, and Rafia. Azalea indica Admiration, Brilliant, Chelsoni, Criterion, Duc de Nassau, Etoile de Gand, Extranei, Gledstanesi formosa, Kingborni, Mars, President Claeys, Queen Victoria, Stella, and Vesuvius. Epacrises Carminata, Eclipse, Hyacinthiflora, Minista splendens, The Bride, and Viscountess Hill. Of plants with variegated or ornamental foliage—Agapanthus umbellatus fol. variegatis, Agave americana aureo-variegata, Arundo Donax variegata, Chamærops excelsa, Dracæna australis, Hydrangea japonica variegata, Isolepis gracilis, Phormium tenax, Sedum carneum variegatum, S. Sieboldi variegatum, Veronica Andersoni variegata, Yucca aloifolia variegata, Y. filamentosa variegata. Fuchsias Avalanche, Beauty of Clapham, Blue Boy, Empress, Enchantress, Heather Bell, and Sunshine. Pelargoniums, Show—Archbishop, Charles Turner, Congress, Consul Cameron, Emperor, Lady of the Lake, Menilek, Troubadour, Mr. Rassam, Elvira, Envoy, and Lord Napier. Fancy—Belle of the Season, Brightness, Fanny Gair, Lord of the Isles, Mrs. Mendel, Princess Teck. Spotted (French and English)—Argus, Boileau, Cybele, Monsieur Le Play, and Monsieur Prévot. You perhaps have the Gold and Bronze-leaved variegated sorts: if not, they are fine for house work—Achievement, Edward George Henderson, Excellent, Lucy Grieve, Jetty Lacy, Lady Cullum, Mabel Morris. May Queen, Mrs. John Clutton, Sophia Dumaresque, Sunray, Italia Unita, and Picturata. Some of the Zonals are also fine for their flowers, which you no doubt have, but we nevertheless name a few—Beauty of Dulwich, Blazer, Crimson Perfection, Duchess of Sutherland, Duke of Edinburgh, Fire King, International, Lord Derby, Mdlle. Nillson, Seraph, Lizzie, and Princess Dagmar. Chrysanthemums are indispensable for an autumn display. Large-flowering—Jardin des Plantes, Countess of Warwick, Golden Beverley, Hermine, Miss Maréchaux, Mrs. Huffington, White Christine, Princess of Teck, Dr. Sharpe, Fingal, John Salter, and Purpurea elegans. Pompon—The Little Gem, Prince Victor, James Forsyth, Brilliant, Golden Cedo Nulli, and White Trevenna. You can raise from seed Cinerarias, Calceolarias, Primulas, and Cyclamen persicum. You will find particulars of the treatment of conservatory and greenhouse plants in Keane's "In-door Gardening." It may be had by post from our office for *1s. 7½d.*

Linum trigynum Culture (*W. W.*).—"It requires more warmth and moisture than is generally given to it while making its growth, and one of the best positions it can have is a light and airy place on a raised stage or shelf in a stove, and I think that in general red spider is the result of too cold or too dry a treatment. After it has made its growth it is better to remove it to a colder house, but still to a house where it is not too cold to give it a syringing every day. If I find red spider inclined to attack it I add a little soft soap to the water before syringing, and apply it to the under sides of the leaves with nearly the whole force of a syringe. Your readers will most probably think I am a great advocate for warmth and moisture, and I confess myself guilty to the impeachment, for so long as moisture is not stagnant and warmth is not too close I believe nearly all plants are benefited by it. In other words, I believe if plants are grown in double span-light houses with plenty of ventilation, that heat and moisture are necessary adjuncts. Linum trigynum likes plenty of pot room and good treatment. A top-dressing or mulching of manure such as would be applied to Peach and Nectarine trees in pots seems to suit it well, and it ought to be daily syringed till it begins to open its flowers. Red spider is its only drawback, but a large plant in a good-sized pot is invaluable, as with good treatment it will remain in bloom for six months of the dullest season of the year—from October to March.—C. C. P."

Thrysacanthus rutilans Culture (*G. S.*).—Insert the points of the shoots now singly in small pots in a compost of two parts sandy loam, one part sandy peat, and one part silver sand. Place them in bottom heat, and keep them moist and shaded. In the course of two or three weeks they will be rooted, and in about six weeks should be shifted into larger pots, using the same compost as before; then place them in the stove. They require a light airy position and a moist atmosphere. Shift the plants into larger pots as required, but not after August. After September give no more water than enough to keep the foliage fresh. When they show for flower, water more copiously. They require a stove at all times, but will do in a heated vinery in summer.

Eucharis amazonica to Flower in Winter (*Idem*).—The plant should at once be potted if necessary, and be placed in a bottom heat of 70° to 75°, continuing it there and watering as required for the next three months. At the end of that time it will have made a good growth, and should be gradually withdrawn from the hotbed and the watering lessened, yet giving enough to keep the foliage fresh. It should have a position near the glass, combining plenty of light with abundance of air. Keep it here with a diminished water supply until six weeks before you desire flowers, and it will probably throw up for flowering after it has been that time in the hotbed, to which it should be returned. It requires a stove, and a compost of two parts turfy loam, one part fibrous peat, and one part leaf soil, with a free admixture of sharp sand. Good drainage is necessary.

Fowls' Manure—Cucumbers and Melons (*Amateur*).—The dung of fowls is beneficial to all kinds of plants, and may be used like stable or farmyard manure, but only one-fourth of the quantity should be given at one time. For plants in beds or borders it should be sprinkled on the sur-

face, and pointed in with a fork. If used as a liquid manure, one peck to thirty gallons of water is sufficiently strong, but not too strong for Vines, Cucumbers, or Melons. In no case let it come in contact with the foliage. At the above strength it is suitable for all plants to which liquid manure is usually given. For a house, Cox's Volunteer, Telegraph, and Dale's Conqueror Cucumbers are excellent and large; Masters's Prolific is smaller, but a very free-bearing excellent sort. Of Melons, grow Heckfield Hybrid, Meredith's Hybrid Cashmere, and Dr. Hogg, green-fleshed; and Wills's Oulton Park Hybrid, Mounsden's Moreton Hall, and Golden Perfection, the former two scarlet, and the latter yellow-fleshed.

Perennial Asters (*B. B.*).—Aster Amellus major, A. grandiflorus, A. dumosus, A. tanacetifolius, A. Novi-Belgii, A. hyssopifolius, and A. sikkimensis. A. tenuifolius is also good.

Verbenas Blighted (*R. H.*).—The newly-struck cutting sent us shows the ravages of the thrips, and the black on the leaves is due to the attacks of those insects or green aphis. Fill the house with tobacco smoke on a calm evening, shutting up closely, and having the atmosphere tolerably moist, but the foliage of the plants dry. Repeat the smoking on the next night but one. In the course of a few days we would remove the plants to a cooler house or frame, and they will succeed much better than in a heated structure. (*J. F. B.*).—We have no doubt yours are affected with the disease that has taken such hold on Verbenas this season. We believe it arises from propagating them for so many generations from cuttings, and we advise cuttings to be taken from the most healthy plants, and from those grown a distance—*i. e.*, change the stock. We would also direct attention to the desirability of raising from seed, and propagating from the kinds so raised. Indeed, some very good sorts can be obtained from seed, and they do not exhibit any traces of disease for some time. —G. A.

Pruning a Newly-planted Orchard of Dwarf and Pyramid Trees (*W. I. T.*).—As you justly observe, opinions differ widely as to this, and we are not surprised at your being puzzled. Perhaps our advice may differ from that of all others, for if we had planted such an orchard during the past winter, we should not prune at all till next year, but would take care to secure every tree in its place by proper stakes and tying. In planting all kinds of deciduous trees and even quickset hedges, we make it a point not to head them down till the following season, when they are cut in rather severely. This mode of proceeding we think is more especially necessary with fruit trees that are worked, as a too-close heading in the first year is apt to produce suckers, which are better avoided. The mode which you have marked of cutting them in may do very well the second year, but we would not cut them in so severely, as bush and pyramid trees require the knife less than standards. Keeping the head within bounds, while the stem is enlarging to bear it, renders cutting-in the head essential in the case of standards, but the necessity for this is not so great where the trees are bushes or pyramids. Some judgment, however, is required in cutting the latter, in order to obtain a well-formed head; but we have more faith in hot summers restricting growth and promoting the formation of fruit-bearing buds, than in any skilful manipulation with the knife. Assuming the position you have chosen to be a suitable one, it is very likely you will be successful. By an accident this answer has been delayed a week.

Evaporating Liquid Manure (*Amateur*).—You may use the strong liquid manure that flows from your stable for placing in your evaporating pans in a Cucumber house, if the liquid has been collected and stored ten days to ferment, and then mixed with, say, four times its quantity of water. Guano water may be used in the same way at the rate of from 2 to 3 ozs. of guano to a gallon of water. If you use either much stronger the fumes may be dangerous in a close house at night.

Cucumber Leaves, &c., Scalded (*J. A. Jeffrey*).—We have not the slightest doubt that the leaves of the Cucumbers and other plants are scalded by hot vapour and a deficiency of air, attended with too much heat. From 70° to 80° is a good temperature for Cucumbers during the day in sunshine, and with a little air on at top; 70° should never be exceeded with artificial heat from a flue. Watering the flue every day to produce the dense steam is altogether wrong; such hot steam, and then the sun beating on the leaves, with deficient ventilation, will quite account for the scalded appearance of the foliage. It will be in every way better to have evaporating pans on the flue, and to touch it directly with water but seldom Your next remedy is to give air at the top so early as to have the foliage dry before a bright sun beats upon it. Less heat, less direct steaming, and, if not more air, at least giving it earlier at the top of the house, will be your means of getting out of the difficulty. Better damp the walls and floor instead of the flue.

Vine Roots Diseased (*J. C. S.*).—The roots are infested by the mycelium of some fungus, and that we think must have found its way into the border with dead woody matter; probably there was some in the loam or in the burnt earth that had escaped the action of the fire. A good soaking of lime water applied to all the border would no doubt be destructive to the fungus in a certain degree, but we fear it has too deep hold of the roots to be so arrested. Lime is, however, a good remedy for fungus, and we should give it a trial. Take care to have the lime water heated to the temperature of the border. We would also try a solution of 2 ozs. of salt to the gallon of water, giving a good dressing, and it is likely the fungus will be subdued, and the Vines may form fresh roots that may be proof against further attacks. We think the border is very rich and the Vines vigorous. The moister the border the less the fungus will spread, and it is not unlikely a thorough soaking of water would destroy it; and such may also cause its full development, in which case the roots of the Vines will speedily die off. In case the Vines do not go on satisfactorily we would lift them and make entirely new borders, cutting away all the diseased roots, and dusting those left with quicklime. If you could shade the house for a few days we would remove the surface soil down to the roots, dust them with quicklime, put over them about 3 inches of soil, and cover the border with hot dung, and this we think would effect a cure. If there is any woody matter in the border you have no remedy but to remake the border.

Vine-grafting—Planting—Dressing (*R.*).—There can be no objection to grafting the Vines as you suggest, or inarching in summer instead of grafting. The planting the Vines under an arch is purely a matter of taste. Unless for grafting and inarching purposes we would prefer one. We cannot say that by selecting the best and cutting out the inferior one the roots of the latter would produce mildew, &c., if the plant were cut so far back that the stem would send out no shoots. We have, however, met with some cases where not only decaying roots but decaying organised matter produced a dangerous mildew or fungus in the soil. It is of little importance when you plant Vines inside of a house. If when at rest in the autumn, you may lay out the roots. If the Vines are growing, and planted in April, May, or onwards, the mode lately adverted to by Mr. Thomson is the best. If a growing Vine were in a pot we would merely extricate the roots at the surface of the ball, and not greatly disentangle the roots. Houses should be painted inside when Vines, &c., are in a state of rest. Every growing plant will feel the effects of the paint until the smell of lead and oil has gone. If not quite gone you must give more heat and afford a circulation of air both by day and night; little would do at night. Your wall we consider to be of a very good height for trees to be easily managed. To fill it quickly and yet give the trees somewhat free scope, we would plant them at from 12 to 14 feet apart. You might have the permanent plants double that width apart, but were we planting to-morrow we would give them less room. We could limit extra growth by root-pruning, and if anything happened to a tree there would not be such a gap on the wall. On the whole, we should be inclined to restrict room instead of dwelling on the many square feet or yards a tree occupied; we should thus have more variety. 11½ feet will be ample for a border for such trees.

Ivy against Wire Netting (*Old Reader*).—We have never tried Ivy against wire netting, but we have a very good screen of that plant supported by sturdy posts 6 feet apart, with a rather thick rail at the top, the spaces being filled in with slender poles put in diagonally, so as to divide the whole into diamond-shaped openings of about a foot or so wide. By tying the Ivy to this framework for a year or two it soon reached the top, and hangs over, covering the sides effectually. The site is far from good, and at one place, where some buildings created a violent current from the coldest quarter, the Ivy was longer in getting up, and even now suffers at times, losing some of its foliage in severe winters. Assuming yours to be a case like this, could you not manage to put up some shelter as a backing on the windy side for a few weeks in winter until your plants were established? Perhaps fixing up some Russian matting would serve the purpose for a time, taking care not to let it flap backwards and forwards, and so injure the Ivy. When the latter becomes older it will withstand the cold better, for we think it is the unripened state of the plant in autumn that renders it unable to bear the rigour of winter, but when once established it will be safe. Most of the varieties are hardy enough, but the very hardiest is the common wild one, which is also about the best climber; but its appearance is not so good as that of some of the others, nor does it grow so fast.

Glass (*M. C. E.*).—We should not hesitate about glazing a vinery with the glass you enclosed. It is very stout, translucent, and the ribbing has a tendency to prevent scorching.

Appleby's Registered Fumigator (*Sussexensis*).—We believe it to be efficient and self-acting. "D., *Deal*," reports of it very favourably.

Liquid Manure for Roses (*F. H. G.*).—There are so many ways of applying liquid manure to Roses, that it is difficult to say which is the best. As a general rule the greater varieties there are of chemical ingredients in the liquid manures the better, provided they are not applied too strong. One very good plan is to have a large barrel sunk in a corner of the kitchen garden, or where there is a range of houses at the back of the sheds, and to keep it constantly filled with a strong liquid manure made of sheep or deer droppings, soot, and superphosphate; the whole to be stirred up occasionally, but allowed to settle previous to use. Add one can of the strong solution to three of pure water, and put some fresh guano into the liquid manure—about a handful to five gallons—at the time of using it. It is a good way to mix the guano in a separate water can, and then add from it to each can as it is applied to the trees. Wherever there is a cow house or a fold yard to fly to, there a liquid-manure tank ought to be made to take the drainage from the cow house and middens, and this liquid manure, previous to use, would require little more than to be diluted according to the strength, which, of course, will be much affected by the time of year or quantity of rain that falls. As a rule it is better to apply often and weak than to risk the use of liquid manure in too strong a state, as such is apt, especially if the soil is at all heavy, to make it soapy, and to stop up the particles of the soil, rendering it impervious to air. We cannot too strongly impress upon all persons the advantage, we might almost say the necessity, of storing up all the liquid waste from the house, as soapy water, the drainings from the scullery, &c. There is as much good liquid manure wasted by not taking the precaution beforehand of securing these drainings from houses as would secure good kitchen garden crops against drought, even in the most unfavourable seasons, and would be of the greatest value to the gardener, both in the floral and vegetable department. We can fully endorse the warning lately given in the *Times*, by Mr. Bailey Denton, about the probable scarcity of water this season. The rains at the end of last year did not bring the rainfall up to the average, and every month of the present year has been much under the average, only 1.09 inches of rain having fallen in March, and up to the 10th no rain in April. The springs are nearly as low now as they were last summer, and after this month is over scarcely any rain finds its way into the springs, on account of surface evaporation and the moisture taken up by growing plants. It is scarcely necessary, for instance, to point out the difference between an inch of rain falling on a fallow field in winter, or the same field in May or June when covered with a growing crop of corn ready to take advantage of every drop of moisture. We are induced to make these remarks as we find, not only that the springs are weak for this time of year, but also that the rain-water supply is short; for where the soft-water supply is dependant (as it generally is), upon what falls on the roofs of houses and outbuildings, it does not get material benefit from snow, which generally when it begins to thaw slips off in great masses from the roofs (often to the detriment of the heads of passers-by), and seldom finds its way into the soft-water tanks. What makes us refer to this is, that by far the greatest amount of rainfall this winter has been in the shape of snow, which, for the most part, has been accompanied with a good deal of wind, so that very little, if any, has found its way to the soft-water supplies. We feel sure that one of the important problems of the present day will be how to supply the country as well as towns with water, not only for sanitary purposes, but for the growth of vegetables and agricultural produce. Land is being drained, trees cut down, hedgerows grubbed-up, and everything is being done to increase the power of evaporation, but little or nothing to store-up against a time of drought what is taken off the land during the winter months.

Insect on Peach Trees (*E. W. R.*).—The leaves of the trees in your

orchard house are eaten by a weevil, Otiorhynchus tenebricosus. They feed at night; then go with a light, place a white cloth beneath a tree, shake it, and dispose of the marauders which fall upon the cloth.

INSECTS (*C. C. E.*).—Your "gentleman" is the larva of one of the ground beetles (Harpalidæ), and his "occupation" is that of eating small worms and other soft-bodied underground creatures. Some of his brethren occasionally indulge in the tender shoots of cereals.—I. C. W.

NAME OF FLOWER (*H. M. I.*).—The correct name is Chinese Primrose, Primula sinensis.

POULTRY, BEE, AND PIGEON CHRONICLE.

INFLUENCE OF THE MALE BIRD.

I AM reminded by our "Chaplain's" letter, in last week's Journal, of the almost utter want of positive knowledge amongst poultry fanciers as to the real time during which the definite influence of any given male bird extends after separation or change. No question is of greater importance to all breeders, and yet, strange to say, it cannot be said to have been as yet satisfactorily decided.

About a year ago I mentioned that several American breeders were about to make special experiments to determine the matter, and I had hoped ere this to have been able to state something conclusive; but the most crucial of the tests proposed were either not carried out, or have not yet been reported. The subject has, however, aroused a great amount of attention in the United States, and several useful communications have come to hand, and been published in the *Poultry Bulletin* and I have, therefore, thought it might be well at the present season to collect from that useful journal the principal evidence yet brought forward, in the hope that some of our own breeders may be able to throw further light on the matter.

A contemporary first quotes two statements of fact from the *Massachusetts Ploughman*. Fact number one concerns two Bolton-Grey hens, which came from a yard where only the pure breed was kept, but on their way were cooped one night only with a Dorking cock. They each laid an egg before starting next morning, and a neighbour wishing some Bolton-Grey eggs, these were given in full confidence that they would produce pure Bolton-Greys. Not so: the chicks when hatched had all the colour of Boltons, but five toes and other marks of the Dorking. Fact number two concerns a hen which escaped alone to the woods, where she laid a clutch of eggs, and brought out twelve chicks, no other fowls being near: hence nearly if not all the clutch must have been fertilised before the escape. The two facts appear at first sight inconsistent, and the Editor of the *Bulletin* thinks the first incredible. I do not, having known similar cases; but let us go on.

The writer of the article himself one day only accidentally allowed a Light Brahma cock to get along with some Danvers White hens, the latter being a breed formed between Buff Cochins and White Dorkings, having White Dorking bodies with bare yellow legs. The chicks came, some with the cross most distinctly marked, some with very little of it, and some none at all, except a tendency to feathered legs. This case, like the one from the *Ploughman*, opens up several questions, which the writer himself states as follows:—1, Was the Brahma father to all the chicks showing points? 2, Was he father to any? 3, Can a chick have two fathers? and 4, Did the unfortunate connection re-awaken the tendency to feather derived from the Cochin ancestry?

The next two cases recorded seem to extend the time. In one, a gentleman breeding Game, finding a neighbour's feather-legged Bantam cock come over occasionally, penned his hens up securely, and saved no eggs for a month after. He then thought them safe, but several of the chickens had feathered legs, though with no other sign of the cross. Again, Mr. E. Howlett writes that he separated a fine Buff hen, which, after being placed entirely alone, laid sixteen eggs, from which she hatched fourteen chickens.

In the next number of the *Bulletin* we have an interesting letter from Mr. I. K. Felch, one of the largest and most careful American breeders, which deserves special attention. Referring to the known fact that one visit to a Turkey cock fertilises the whole batch of eggs, he notes the corresponding fact, which I never remember to have seen before noticed in connection, that even in a state of nature, after the hen has begun to lay, she totally avoids the male bird. With the common hen this is not the case, and the reflection is at once suggested, Whether the economy of Nature be not altogether different in the two kinds of fowl? He then goes on to state, that after all his great experience, he has arrived at and always acted upon the conviction, that if the first three eggs laid after removal from a male companion occur within four days, they will be his progeny, and that the fourth will belong to the new one. And the evidence he gives is very emphatic, as he allows all his young stock for sale to run together indiscriminately before shipment, trusting to the few days on rail or steamer to counteract the evil, and he gives the names of many purchasers to prove that this is invariably done, and that the birds when arrived breed pure. Referring then to Mr. Howlett's no less conclusive experiment with the Buff hen, he confesses himself puzzled, and suggests whether it may not be true, even supposing a separated hen may hatch for a fortnight after separation, that in case of a second mate being introduced, the influence of the first is made void.

In the next number Mr. Huntington, one of the best American Game-breeders, corroborates Mr. Felch, from an experience of twenty years, that the influence of the cock ceases after the fourth egg. And in the next, again, Mr. Felch reports a special experiment. He separated two Brahma hens, but they only laid one egg, the change stopping them till the fifth day. Setting the eggs, one only of the third eggs, laid on the sixth day, showed signs of hatching, the remainder keeping clear. He also quotes another gentleman who had a lot of mixed Bantams together, and saving the eggs one week after the kinds had been properly separated, found the breeds pure.

The next letter on the subject is from a Mr. Woodward, and goes the other way. In March he bought some Spanish pullets which had run in the winter with "Bucks County" cocks. No eggs were set till May, two months after purchase and four months after separation, yet the chicks even then showed "Bucks County" points in a degree. The contradiction is, however, in this case more apparent than real, it being a well-known fact that the first union will often affect the whole future progeny, in which no actual direct parentage can be possible. He also states, as a proof of the influence of colour on the imagination of the hens, that during a period he had some Light Brahma hens running with his Spanish; the Spanish chicks came with white feathers mingled with the black, which ceased as soon as the white fowls were removed. Next month another correspondent gives a similar case. He put a single-combed Brahma hen into a fine pen of Crêve-Cœurs. The next clutch of chicks varied in colour, most were worthless, and three had single combs. The Brahma was removed, and the chicks came all right. In these cases no alien parentage had anything to do with it; it was simply the influence on the hens of sight and imagination.

Another correspondent separated both Dorking and Cochin hens, and set the eggs laid for six days; they all proved fertile. The last letter on the subject relates that a Light Brahma cock becoming ill (and finally dying), the eggs of a favourite pullet were set till the tenth day after he became prostrate, when she stopped for two or three days only. The tenth egg was fertile, but when she commenced again, though the cessation had been very brief, they were worthless.

I have now reviewed the whole of the evidence in the American periodicals. I believe the whole to be trustworthy, and it seems at first sight as if nothing definite could be gained from it. This, however, I think would be an incorrect conclusion; and while I am conscious that considerable uncertainty yet remains over much of the question, and trust some of our breeders may be able to throw light upon it to a much further extent, I venture to suggest the following conclusions as somewhat probable. To dogmatise would be folly in a matter of which the very premises are as yet of such a merely tentative character.

1. It seems at least in the highest degree probable, that the influence of a given male lasts longer if no successor be introduced, or that, in fact, it may either remain for a certain time if undisturbed, or if disturbed be in a less time (but how much less is hardly certain) neutralised or rather overpowered by the second.

2. It seems nearly certain that whatever the precise time be, the influence of a given male in ordinary cases lasts for a considerably less time than has been generally supposed.

3. It seems established that there is such a thing as an extraordinary influence. That the first union often has a lasting effect is well known. Hens first crossed with a Polish cock have been known to show a tendency to breed crested chicks all their lives; and cases in my own knowledge have led me to think it extremely probable that, say a Brahma hen first crossed with a Dorking might throw occasionally five-toed chicks afterwards.

For in all these cases it is to be observed that the plumage is generally unaffected, and that the old taint is far more likely to show in some peculiar point, such as a top-knot, a pea-comb, or a fifth toe, which has become as it were a very component of the breed.

4. But it also seems at least possible that an occasional or single *mésalliance* with such a strongly-marked variety, as say a Brahma, a Poland, or a Dorking, may not be sufficient to disturb the actual parentage or the general plumage, and yet enough influence may be given to impress on a portion of the chicks the one peculiar point Several cases of this nature have come within my notice, and they may serve to account for many occurrences which have been attributed to impurity of blood in the actual parent. It appears, in short, as if in a certain sense a chick may "have two fathers." Further light on this interesting part of the subject is much to be desired.

I am at all events inclined to the opinion that in ordinary cases, when a male bird is changed for another of the same breed, about a week may be relied upon to determine the paternity. In case of an alien or markedly inferior bird, I should, however, certainly allow longer; and I am also inclined to think that if there have been very few hens the influence might probably last longer than if they were numerous. I shall hope to hear further from some of your correspondents on this important question, which is, perhaps, of all others most interesting to fanciers generally.—L. Wright.

OVER-FATTENING FOWLS FOR EXHIBITION.

At the Edinburgh Christmas Show I purchased at a long price a handsome Buff Cochin pullet weighing 9 lbs. She appeared in splendid feather and condition, and to avoid risk I fed her for two or three days on soft food. At the end of that time offering her grain she refused it, and this continuing day after day, coupled with never laying an egg, aroused my suspicions of inflammation of the proventriculus, for which I treated her with small doses of Plummer's pill at intervals. The remedies proved unavailing; she steadily refused any but a soft diet, was harassed by incessant thirst, and lost rapidly in weight and condition till she became mere skin and bone. At length I had her killed, and the post-mortem examination revealed that the liver was enormously enlarged, weighing fully 5¾ ozs. It was friable and pale, with yellow spots on the surface here and there; these spots were caused by lumps of hard fatty matter, some of them as large as a small nut. These lumps were of a bright yellow externally, very hard to cut, and internally had a dark nucleus; they were very numerous all through the liver.

As a warm lover of the poultry fancy, should the publication of these details do something towards checking the ever-to-be-condemned system of over-fattening prize poultry to their ultimate ruin, I shall be more than repaid for the loss I have sustained.—F. S. F.

NESTS FOR EGG-HATCHING.

Where a choice can be had, a nest on the floor should be preferred. I would not put much straw in the nest, because, where this is done, the eggs are very apt to become chilled, especially early in spring.

A very successful and simple method is this:—Cut a tough grassy turf about 15 inches square and 3 or 4 inches thick. Hollow out the form of a nest on the lower side, then place it where the hen is to sit with the grassy side uppermost, and press it firmly on the bottom or floor. There will then be the form of a nest in the grassy side on account of its being hollowed on the other. On this place the eggs and hen. Two hens set in this manner have hatched all their eggs except one, which contains a dead chicken. Taking into account the severe weather we have had for the last ten days, this must be considered good so far north at the present season.—J. M. C., *Aberdeenshire.*

Stroud Poultry Show.—Exhibitors will be glad to learn that the committee of this Show have sanctioned the use of padlocks for securing exhibition hampers. A label having the name and address of the sender, with the number of the "class and pen," must be attached to the key of each padlock, which must be sent by post to the Secretary, a duplicate key being retained by the exhibitor. There will be two self-supporting classes for Malays—viz., one for cocks and the other for single hens, and it is to be hoped that the fanciers of this breed will send as many entries as they possibly can; for should there be a good muster of entries at this Show, no doubt there will be a class for Malays next year upon the same footing as the other breeds.—R. J.—[The Judges engaged are the Rev. G. F. Hodson, and Mr. R. Teebay, for Poultry; Mr. W. B. Tegetmeier for Pigeons; Mr. C. Rayson for Rabbits; and Mr. W. A. Blakston for Canaries and other Cage Birds.—Eds.]

PIGEON-CARRYING CASE.

Mr. Graham requests a reply through your columns; the following is in explanation:—Our offices at Exeter Hall were temporarily occupied during the Show, and the business being completed at the end of January the offices were given up. Upon an after-inquiry we found two letters from Mr. Graham, the first dated February 11th, asking the time his birds arrived, the second requesting an immediate answer. We much regret we did not receive Mr. Graham's letters earlier, as we think we could have given some substantial evidence upon the subject. Mr. Ford, a member of our Committee, remembers the arrival of Mr. Graham's birds at 4 P.M. on the day of judging; and further, a receipt was given to the railway company for every pen of birds received, which, if produced, would show the day, if not the hour, of arrival. The result we very much regret, as we think the immense charges made by the railway companies for the carriage of birds should at least secure prompt delivery. A similar case occurred on the same occasion. Of a number of pens, dispatched together and from the same exhibitor, a portion were delivered on the day appointed for the reception of birds, the others arriving the following day, and "too late for competition." We are not favoured with the merits of the case before us, but it appears by Mr. Graham's letter that the action was commenced against the railway company without the most important information, and that failing, Mr. Graham jumps equally as quickly at a conclusion—namely, that we were in fault.

We shall be glad if Mr. Graham will favour us with some further information upon the subject, as we should have, though the railway company could have been made to produce their waybills, which would have shown the date and time of the transfer at the railway junction. Mr. Graham, finding no reply to his first letter, with a little trouble could have referred to the catalogue and found our addresses, together with those of many members of the Committee, to whom he is personally known, all of whom would have been glad to have assisted him in the matter.—C. Howard & W. J. Nichols, *Hon. Secs.*

[We forwarded Mr. Ford's letter to Mr. Graham, and we hear from Mr. Jones that he has written to him.—Eds.]

CANARY-JUDGING AT WOODBRIDGE.

Mr. Ashton, in his remarks on Canary-judging at Woodbridge, asks "How is it that the Judge of Canaries at the recent Woodbridge Show has rendered himself conspicuous by reversing the decisions of many of the tried and acknowledged judges in Canary matters?" and I beg to reply that this did not occur, the prize being awarded to 371, the "crack Lizard," but by some mistake the card was placed on 372, the "four-shilling wretch," which I left unnoticed. I found out the error on my return to the Show, but too late for correction, as the prize lists were printed; but seeing the birds both belonged to one exhibitor I took no further trouble than putting the card on the proper cage. My book of awards is open for inspection at my residence.

This explanation would have been given in reply to one signing himself "A Correspondent" in your issue of the 23rd of March had the name of the writer been given, but I have a decided objection to reply to an anonymous communication.

With respect to the other parts of Mr. Ashton's letter, I have only to say, in defence of the Secretary, that every care was bestowed upon the birds at the Show. This I saw, as I did not leave till within an hour of its close, and at that time not a single bird of Mr. Ashton's was in any way ailing.—E. Hutton, *Pudsey.*

VENTILATION OF HIVES DURING WINTER.

In continuation of this subject I will give a description of a hive which I had made twenty-five years ago, and of the manner in which I ventilated it, as well as other hives. The hive referred to was made to meet the requirements of those who could not be induced to use wooden hives, and although there are many who still believe that nothing but straw will answer for bees, I consider that straw hives ought to be things of the past. This hive was made according to my directions, with a hole 2 inches in diameter in the centre for feeding, with slits at the side similar to the "Economic hive" recently described in "our Journal," the whole being covered with an adapting board, with holes corresponding to those in the hive. Over the side slits slides were inserted, in imitation of the Stewarton hive; there were also holes in the front and back, near the top of the hive, 3 to 4 inches long by 2 wide, inside

the frame, which was fitted into a hole in the hive made large enough to receive it. A piece of wire gauze was nailed to the frame, and over this was a door, so that by opening or shutting it the hive was ventilated accordingly. If this was not enough I opened the orifices in the crown, and with the doorway quite closed I always found this answer the purpose.

The straw covers of these hives were made in the same way as the straw which we see ostlers place behind their horses in the stable. They were of the exact width of the hive, and tied with the string they were made with at the back, so that they could be taken off or lowered to admit the working of the ventilator at back or front without spoiling them, or causing loose straws to be lying about. As these covers, it will be observed, did not reach farther than the top edge of the hive, they were surmounted by either an octagonal wooden cover or a round terra-cotta one, or quite as often by a piece of tarpaulin. There was no difficulty in raising these to allow of free ventilation or to feed, and they were at the same time a sufficient protection against rain.

I hope these instructions will be of use to your numerous readers, and I shall be glad to give further details if required.—A Lanarkshire Bee-keeper.

AN EXTENSIVE APIARY.

The Baron von Rothschütz, at Pösendorff, near Laybach, in Carniola, cultivates bees on an extensive scale. His apiary numbers more than five hundred colonies, under the superintendence of a manager, who attends to them exclusively from spring till fall, from dawn to dusk, supplying on an average fifteen fertilised queens daily during the season. He has 6500 frames for his hives, of which 3000 contain comb and honey. The apiary is divided into seven departments—first the honey department, with 100 moveable comb double hives, to accommodate 200 colonies; second, a stand with 202 colonies which supply 606 small or nucleus stocks, furnishing bees to accompany queens sold; third, 250 colonies devoted to queen raising; fourth, 250 nucleus hives to receive and hatch queen cells; fifth, a swarming stand with ninety moveable-frame hives; sixth, a stand of thirty-six moveable-frame model or pattern hives, to supply the demand of customers promptly; and seventh, a stand of 120 provincial hives containing Carniolian bees, to supply those who desire to obtain full stocks of that race or variety of the honey bee in the peculiar hive used by the peasantry of the country.—(*American Bee Journal.*)

OUR LETTER BOX.

Challenge.—Mr. H. Lacy, Lacy House, Hebden Bridge, has telegraphed that he accepts Mr. Watts's challenge to exhibit Buff Cochins and Dark Brahmas. They had better communicate with each other by letter.

Two Chickens Hatched from one Egg (*J. W. F.*).—It is perfectly possible, and has occurred, but always from a huge double-yolked egg. Had you thought of it at the time, you had the proof in your own hands by counting the chickens and shells. We believe it to be quite impossible that an ordinary egg should produce two chickens.

Goose Eggs not Hatching (*One Disheartened*).—We are very sorry for you, but the fault is your own. You should have inquired the nature of the birds you had, and you would have found that the Toulouse Geese do not sit. Your answer to that will probably be, "But they did sit." True, but to no purpose. They sit for three hours, and leave for three hours, and so keep on The eggs become alive only to be killed; the four you speak of that were so weakly they could not break through a wetted shell, survived only to prove that under ordinary circumstances they would have been strong goslings. The eggs rot because life has been developed in them and then suffered to perish: hence decay. Had they been clear eggs they would have remained so, though the Goose had sat for a twelvemonth.

Crossing Brahmas and Dorkings (*B. B.*).—The cross between a Dorking cock and a Brahma hen is the strongest. That between a Brahma cock and a Dorking hen is the best fowl. Turkeys, as a rule, should lay at ten months old.

Dorkings Dying (*R. C.*).—Dorkings are more tender than other fowls if they are kept in confinement. Children often over-feed their fowls. We cannot help thinking your children do. If they are Dorkings, and at liberty, they want purging, and you must diminish their food one-half. If they are Dorkings, and kept in confinement, you must change your breed. Cochins, Brahmas, Spanish, or Game will suit you.

Malay Cockerel Plucked by the Hen—Hen not Laying (*R J.*).—If the colours of feathers change to white, it is from weakness, and that is only the result of frequent picking. It is always advisable to separate a cock from the hens if they pick him bare. Did the hen in question lay last year? If so, she was then a pullet, and laid in due course. As a hen she will lay later, but she should have laid by this time. We should imagine she is fat, and we advise you, if you want eggs and chickens, to purge her with castor oil, giving a tablespoonful every day for three days; if she is not cured by this, continue the treatment, but if mending diminish the dose one-half until laying gives proof your treatment is judicious.

Great Harwood Show.—Mr. J. Ashworth writes to us that Mr. Yardley's Pigeons were placed in their proper pens and before judging, that Blue Dragoons were second, and that his Pigeons were properly fed and returned in good condition.

White Fantail (*J. R. Y.*).—If you send 3½*d.* in postage stamps with your address, and order No. 512 of this Journal to be sent, you will find in it a drawing and all the points of Fantail Pigeons.

Artificial Swarm (*R. A. Jenner*).—Do not attempt artificial swarming until next month, and then only during fine weather when honey-gathering is in full swing.

METEOROLOGICAL OBSERVATIONS,

Camden Square, London.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude 111 feet.

Date. 1871. April.	9 A.M. Barometer at 32° and Sea Level.	9 A.M. Hygrometer. Dry.	9 A.M. Hygrometer. Wet.	9 A.M. Direction of Wind.	9 A.M. Temp. of Soil at 1 ft.	In the Day. Shade Temperature. Max.	In the Day. Shade Temperature. Min.	In the Day. Radiation Temperature. In sun.	In the Day. Radiation Temperature. On grass	Rain.
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
We. 5	30.037	46.8	44.2	W.	45.6	55.0	36 8	79.8	39.2	—
Th. 6	30.083	41.8	39.7	E.	45.7	51.2	39.9	90 1	39.8	—
Fri. 7	30.215	43.2	37.8	S.E.	44.8	51.3	28.3	97.8	24.9	—
Sat. 8	30.095	47.0	40 6	S.E.	44.2	56.2	30.2	102.1	26.2	—
Sun. 9	29.980	44.9	40.0	N.E.	45.0	53.0	32.3	80.0	30.6	—
Mo. 10	30.005	43.6	40.2	N.E.	44.7	54.2	33.5	86.5	30.0	—
Tu. 11	30.063	47.2	41.0	S.E.	44.5	54.5	29.3	99.5	25.0	0.290
Means	30.068	44.9	40.5		44.9	53.4	32.9	90.8	30.0	0.290

REMARKS.

5th.—Fine morning, dull at noon, shower at 6 P.M., but not a measurable quantity.

6th.—Dull and cold morning, cloudless but cold evening.

7th.—A very fine bright day throughout.

8th.—Very cold and dull, but not cloudy.

9th.—Occasional sunshine, but very cold north-easterly winds.

10th.—Dull morning, fine towards noon, very bright afterwards, but still very cold except in the sun.

11th.—Very fine morning, less wind, and a trifle warmer, rather dull in the afternoon, and a wet evening

Very dry week, with hot sun and cold winds, nights very clear. Mean morning temperature nearly the same as last week, but the mean of minima 5° less.—G. J. Symons.

COVENT GARDEN MARKET.—April 12.

Business transactions have been more limited during the past week, owing to a much thinner attendance of buyers and the holidays. The continental trade by the way of Calais and Boulogne has also been much interrupted, not nearly the usual quantity of goods being sent at present. Large stocks of Potatoes are on hand, and many cargoes are held over. Yorkshire Flukes bring from 90*s.* to 100*s.* per ton; Regents, 60*s.* to 75*s.*; other varieties from 45*s.* to 65*s.*

FRUIT.

	s.	d.	s.	d		s.	d.	s.	d
Apples ½ sieve	1	6	to 3	0	Mulberries lb.	0	0	to 0	0
Apricots doz.	0	0	0	0	Nectarines doz.	0	0	0	0
Cherries lb.	0	0	0	0	Oranges ℔ 100	6	0	10	0
Chestnuts bushel	10	0	18	0	Peaches doz.	0	0	0	0
Currants ½ sieve	0	0	0	0	Pears, kitchen doz.	2	0	6	0
Black do.	0	0	0	0	dessert doz.	0	0	0	0
Figs doz.	0	0	0	0	Pine Apples lb.	6	0	10	0
Filberts lb.	0	0	2	0	Plums ½ sieve	0	0	0	0
Cobs lb.	2	0	2	6	Quinces doz.	0	0	0	0
Gooseberries quart	0	0	0	0	Raspberries lb.	0	0	0	0
Grapes, Hothouse lb.	10	0	20	0	Strawberries oz.	0	9	1	3
Lemons ℔ 100	6	0	10	0	Walnuts bushel	10	0	16	0
Melons each	0	0	0	0	ditto ℔ 100	1	0	2	0

VEGETABLES.

	s.	d.	s.	d		s.	d.	s.	d
Artichokes doz.	4	0	to 6	0	Leeks bunch	0	4	to 0	6
Asparagus ℔ 100	7	0	10	0	Lettuce doz.	1	0	2	0
Beans, Kidney ℔ 100	2	0	3	0	Mushrooms pottle	1	0	2	6
Broad bushel	0	0	0	0	Mustard & Cress punnet	0	2	0	0
Beet, Red doz.	2	0	3	0	Onions bushel	5	6	8	0
Broccoli bundle	0	3	1	6	pickling quart	0	0	0	0
Brussels Sprouts ½ sieve	0	0	0	0	Parsley sieve	3	0	6	0
Cabbage doz.	1	0	2	0	Parsnips doz.	0	3	1	0
Capsicums ℔ 100	0	0	0	0	Peas quart	0	0	0	0
Carrots bunch	0	4	0	8	Potatoes bushel	2	0	4	0
Cauliflower doz.	3	0	8	0	Kidney do.	3	0	4	0
Celery bundle	1	6	2	0	Radishes doz. bunches	0	6	1	0
Coleworts doz. bunches	3	0	6	0	Rhubarb bundle	0	4	1	0
Cucumbers each	0	6	1	6	Savoys doz.	1	6	2	0
pickling doz.	0	0	0	0	Sea-kale basket	2	0	3	0
Endive doz.	2	0	0	0	Shallots lb.	0	6	0	0
Fennel bunch	0	3	0	0	Spinach bushel	3	0	5	0
Garlic lb.	0	3	0	0	Tomatoes doz.	0	0	0	0
Herbs bundle	0	3	0	0	Turnips bunch	0	6	0	9
Horseradish bundle	3	0	5	0	Vegetable Marrows doz.	0	0	0	0

POULTRY MARKET.—April 12.

We have real scarcity, almost famine. Prices have not been higher for many years. They will last but a short time, but they will pay those well who can take advantage of them.

	s.	d.	s.	d		s.	d.	s.	d
Large Fowls	6	0	to 6	6	Pigeons	0	9	to 0	10
Smaller ditto	5	0	5	6	Rabbits	1	5	1	6
Chickens	4	0	4	6	Wild ditto	0	9	0	10
Ducklings	6	0	7	0	Hares	0	0	0	0
Goslings	8	0	9	0	Guinea Fowl	3	0	3	6
Pheasants	0	0	0	0	Grouse	0	0	0	0

WEEKLY CALENDAR.

Day of Month	Day of Week.	APRIL 20—26, 1871.	Average Temperature near London. Day.	Night.	Mean.	Rain in 43 years. Days.	Sun Rises. m. h.	Sun Sets. m. h.	Moon Rises. m. h.	Moon Sets. m. h.	Moon's Age. Days.	Clock after Sun. m. s.	Day of Year.
20	TH	Meeting of Royal and Linnean Societies.	60 3	35.1	47.7	17	56 af 4	2 af 7	41 af 5	46 af 7	1	1 6	110
21	F		59.5	37.2	48.3	16	55 4	4 7	59 5	54 8	2	1 19	111
22	S		59.0	37.4	48.2	22	53 4	6 7	21 6	59 9	3	1 31	112
23	SUN	2 SUNDAY AFTER EASTER.	59.2	36.8	48.0	21	51 4	8 7	47 6	3 11	4	1 43	113
24	M	Meeting of Royal Geographical Society,	58.8	36.0	47.4	17	49 4	10 7	18 7	morn.	5	1 54	114
25	TU	[8 P.M.	59.6	37.2	48.4	17	47 4	11 7	0 8	3 0	6	2 5	115
26	W	Meeting of Society of Arts, 8 P.M.	58.0	36.4	47.2	18	45 4	13 7	50 8	57 0	7	2 16	116

From observations taken near London during forty-three years, the average day temperature of the week is 59.2°, and its night temperature 36.6°. The greatest heat was 80°, on the 25th, 1840; and the lowest cold 18°, on the 24th, 1854. The greatest fall of rain was 1.40 inch.

VIOLETS—THEIR KINDS AND CULTURE.

AS I grow Violets to a considerable extent for market, I will state my experience on their cultivation, which, however, only applies to them in the open ground. I do not grow any in pots.

In the first place, I will make a few remarks on the varieties, beginning with the white Violet of our hedgerows. This well repays cultivation, both by the size and the number of its flowers. The old Russian, too, although sometimes not so early in late summers nor so late in spring, is not always so—at least with me, for this season it was much earlier than any except Russian Superb, which is worth trying where there is space, on account of its earliness. The Czar is certainly fine, and very productive. There are three other varieties of single blue which must not be overlooked. The best of these, at least I like it best, is Devoniensis; it has a fine quite distinct purple shade. The other two are London and Crimean. These three have stems from 4 to 6 or more inches long, but not strong like The Czar or Giant, and they flower quite a month later than the old Russian; and even after this very tiny flowers are produced throughout the summer, and afford a delightful scent, although, being so small, they are scarcely perceptible. There are some other single varieties, and I grow one, a dull pale red, very like the common white, except in colour. Another, which is white, a little earlier, but not so large nor so pure in colour, is White Russian, and another is quite as pure as the common white, and about ten days earlier; it is very distinct, having a hairy stem and spur, the spur purple or pinkish purple, and the plant is a profuse bloomer. This I find very useful. I have no name for it.

Now I will turn to the double varieties, and begin with those which are white. The old Double White I find very serviceable, partly on account of its long stem, and partly on account of its continuing longer in bloom than the common single one, and I have grown the Queen for some years. I had it the first year it was sent out, and although some—yes, the majority of the flowers are with me a mixture of white, pink, and grey, and many not very double, yet they have desirable qualities, for if you obtain but few really good flowers, yet a good one is something remarkable in size, colour, and scent; there is often a crop of flowers in autumn, and they are some weeks later than our hedgerow Violets. There is another double white which I cannot say much about, as I have not succeeded with it—Alba compacta. I do not think that it will do for market so well as some others. Lest I should omit it I must here observe that the Double Red is rather a favourite of mine; it is anything but compact in growth, but when gathered it is very distinct and pretty, and continues as long in bloom as any that I know. The Neapolitan is very distinct and beautiful, but requires protection in winter. The Tree Violet with me is a little earlier than the old blue, and very double. Brandyana is very distinct and pretty, and with me such an abundant bloomer that the flowers are small; it is blue, purple, and white striped. I do not find it profitable for market, as it flowers so freely that the blooms are short-stemmed, and not fit to gather. I can manage to gather any other variety with stems of sufficient length—about an inch or so—but not this. I cannot say anything about The King, for I did not procure mine direct from Messrs. Henderson, and I rather think it is not true. I cannot distinguish any difference between it and the Tree Violet; I have fine rows of it, but some 200 yards distant from the Tree Violet; possibly this is not a fair trial. I shall pass over other varieties at present.

I will next refer to soil. This I think cannot be made too rich, provided it is light and porous; with this there is no lack as to quantity or quality of bloom. Soil is, I think, much more important than aspect, although aspect must not be overlooked. A position to the north of high trees, and not subject to the drip from them, I find the best; many of my plants are to the north of such trees with naked stems, so that the sun shines underneath in winter, but they are shaded in summer. If, however, the soil is deep, light, and rich, they will bear a considerable amount of sunshine.

Sunshine is very favourable to the increase of red spider. I find one of the best remedies, I might say the best, for the destruction of this insect is to cut off all the leaves about the end of August, and to give a good dressing of soot. The red spider is thus for the most part cleared off, and the insects left on the stems or hearts have but little chance of surviving; at least, I invariably find a healthy growth afterwards, and it continues throughout the winter. I have tried letting the leaves remain, but there is then a very poor weak growth, large patches becoming quite rotten if the weather has been very dry; for the leaves that are very much affected with red spider die, and in wet weather cause the decay of their neighbours. If, on the other hand, you cut off the leaves, and do not dust them with soot, and if dry weather succeed you still have them covered with insects, and little or no good is effected.

Perhaps I ought to say a few words about artificial drainage. This may be secured either in a separate bed or in patches in an ordinary border—for a bed by putting in 15 or more inches of stone or rubble as drainage, with at least 18 inches of soil on the top, and in an ordinary border by taking out a hole 15 inches in diameter, and about 2½ feet or so deep, putting the drainage in the bottom, and filling up with the soil.

I must not quite omit the time of planting. If the plants you procure are not in pots I think September the best time; but if you plant in winter or spring after growth commences it is necessary to cut off all the young leaves. I find the plants do very well planted in any open weather from September till April.

I plant my Violets at 18 inches apart in beds of three rows each; this affords room for hoeing the intervals between the rows while the plants are growing. I sometimes plant them at 6 inches apart, sometimes at 1 foot apart in the rows, just as I have a large stock of plants or otherwise. They soon spread and fill the beds; but they

ought not to remain more than three years in the same place, unless you take off the runners and add manure liberally, otherwise you get the flowers small and short-stemmed. The outside rows of the opposite beds ought to be 2 feet 6 inches apart; this gives room for a 1-foot path between the beds, which, if the plants do well, will not be too much.—G. L., *Market Gardener.*

[Our correspondent has sent us blooms of some of the varieties of Violets which are remarkable for the size and beauty of the flowers and the great length of the stalks: this is especially the case in "Queen," "Davoniensis," and "King." The first and last are very handsome.—Eds.]

When just commencing to write a few lines on Violets, the Journal arrived, and brought the charming letter from what must be a charming spot—the land of Beulah. That such a spot, that such friends of flowers as the young ladies of Geranium Cottage, should be without Violets is indeed "a mistake." That an alliance so natural, suitable, and becoming as young ladies and Violets should not be speedily effected were a loss to both, and so evidently thought the "old Gooseberries."

Every garden worthy of the name should have Violets. Nothing can give a more pleasurable return for the outlay necessary to their prosperity than beds of these lovely flowers, chaste in beauty and redolent of perfume. They are of the first to answer the summons of the sun, calling on the earth to give up its treasures. It is a source of strength to the gardener to feel that his efforts are productive of pleasure. It nerves the arm, clears the head, and warms the heart. It lightens the cares of life, turns toil into pleasure, and is an ever-present reward. Would that employers generally could understand this.

But a few words practical, not cultural. As to kinds, my experience is precisely that of the "old Gooseberries." I have tried and discarded Kings and Queens, and stripes, and uncommon sorts with fine names and characters. They are either deficient in opening their blooms, in constitution, colour, or perfume. Five varieties are what I now exclusively rely on—viz., Single Russian, Single White (not many of these), Giant or Czar, Neapolitan, and Double Russian. These are enumerated in their order of blooming, and will give a supply, subject to weather in some degree, from January to May, especially if a portion of the Double Russian be planted in the coolest and most shaded place in the garden.

The main plantation should be in a sheltered place for early bloom. Here I would sound a note of warning, not to regard a wall as shelter, and plant in front of it. This is a common practice and a common error. A hedge is the natural shelter for Violets; but no credit to me for the idea, which was imparted to me by my present employer, and has been acted on for many years with the best success. Violets have here been grown in the same bed for twenty years, and this spring have been as fine, if not finer, than ever. The border is a narrow one by the side of a walk. It slopes to the south. The shelter is a row of espalier fruit trees running east and west. Here they flourish remarkably, but if instead of the trees the shelter were wall they would linger miserably. I know it is so because I tried it, and since the idea occurred to me I have observed result in scores of instances. Under the wall the roots are dried up in the summer, and, which is of even more importance, they lack the current of air passing over them to keep the red spider down. In their natural habitat, hedge bottoms in the country, a draught of pure air passes over them continually. In towns they lack this, and are seldom seen in a healthy state.

One half of the Violet border here is taken up every year and replanted. The half left produces the earliest blooms, the newly-planted half coming in a little later with finer blooms, and affording longer pickings. The half left last year is taken up this. Thus the whole bed is renewed in two years. Nothing could answer better than this practice, except as to the Double Russian. Every two years is quite often enough to replant this, letting a portion remain three or four years without removal. At every replanting some old soil is taken out and fresh put in —turfy roadside choppings, no manure.

Planting is done as soon as convenient after blooming. The plants are soaked with water occasionally to have them established, and dressed with soot frequently to ward off attacks of red spider. The soil is worked deeply, and is good from top to bottom. This induces the roots to strike downwards, and prevents much suffering from drought.

The Czar, or what I call the Giant, seeds freely enough, and reproduces itself as truly as the Single Russian does, but it blooms very sparingly, and is not worth growing in this way. Neither it nor the Russian, however, are seeding freely this year; the sun being so hot has dried up the embryo seed vessels, which is the case with other things besides Violets, the seed of which, or the pulp surrounding it, is of more value than Violet pods. The variety I have under the name of Giant is better than that named The Czar, in being more free in growth and free in blooming.—J. W., *Lincoln.*

CULTURE OF WEEDS.

"So use thy foes as to improve thy fortune."

I have long been a reader of "our Journal," and have often been interested as well as instructed by the many and varied methods of cultivation set forth and debated in its pages, but I do not remember to have noticed the "Cultivation of Weeds," although it appears to me that instruction as to their culture is of some importance to most cultivators of the soil—I say most, because I observe in the accounts given by some of your correspondents, that in the best kept gardens weeds are not allowed. Well, all I can say on that subject is, that I have not seen a garden so kept. Weeds, says a friend of mine, "will be sure to take advantage of the gardener's absence, particularly at certain seasons of the year, so much so that it is necessary to do little more than close the garden door, and return to find a fresh batch of the pests."

Now, if weeds are the rule and must be endured, at least would it not be advisable for the gardener to include them in his catalogue of plants to be cultivated, and then try to turn them to account? This appears to me quite within the bounds of possibility; if it should be disputed, we must acknowledge one of two facts, either that weeds, as a class, are an unmitigated evil, or that horticulturists have not arrived at a sufficiently advanced state of proficiency in their art to enable them to realise their intended position in the vegetable world.

Then as to their proper cultivation, if such must be admitted, so as to enable them to fulfil their appointed place in the economy of Nature, it is necessary to ascertain first to what useful purpose they can be applied. My answer is, to manure the ground on which they have grown. If I am right in this opinion, then the more matured they are, short of seeding, the better, for then they will have drawn from the earth and air all the elements of which vegetation is composed, which, when dug into the ground and decomposed, will be within the reach of the succeeding crop. To accomplish this, all that is necessary is to hoe or rake over the ground after each crop in September or October, and allow the seed to strike and grow, which will not only rid us of the seed which would otherwise remain as a pest for years to come, but also be a benefit to the succeeding crop.—Starbeck.

CINERARIA CULTURE.

Amongst softwooded spring-flowering plants suitable for decorative purposes in the greenhouse and conservatory, also for placing in various positions in dwelling-houses, there are few more useful than the Cineraria. The plant is inexpensive as regards its first cost, and when well managed nothing can be more striking than its dense masses of brilliant-coloured flowers. Admirers of this flower who have frequented the metropolitan exhibitions during the present season must have observed a considerable falling-off, both as regards the finish of the specimen plants sent for competition in the various classes, and also in the quality of the flowers, neither being more than second-rate. Probably this may arise from the sum offered in prizes not being deemed sufficient to cover the expenses of conveying large plants to and from the exhibition; certainly plants with heads of flower 15 inches across are not what one expects to see at the London shows. Even the varieties do not seem to be improvements on those which used to be set up for exhibition a dozen years ago.

Of new varieties introduced to the notice of the public during the present season, some of the flowers seem to be acquisitions—large in size, and of good form and substance, bright and decided colours being predominant amongst them. No certificates have been awarded to any of them; probably in some cases the seedling plants only were shown. Messrs. Standish & Co., of Ascot, have produced some good seedlings, and there were some promising flowers sent to the first April meeting of the Royal Horticultural Society by Messrs. F. & A. Smith, Dulwich.

For ordinary decorative purposes I prefer seedlings, as being

less troublesome to manage, although named varieties are easily cultivated. If it is intended to grow seedlings, it is well to make sure that the seed has been obtained from the best-named and well-marked sorts, as it is as easy to grow good flowers as bad ones, the difference in the price of the seeds being but of small moment in comparison to the disappointment of having second-rate flowers only.

To have a fine bloom of good-sized plants in March and April, sow the seeds about the 1st of May, using well-drained pots or pans, and scattering the seeds thinly in a compost of equal parts of loam and leaf mould, with the addition of a little silver sand, mixing these materials in a rough state. Fill the pot or pan three parts full, and pass through a sieve a small portion, in which the seeds should be sown, just placing over them as much of the fine soil as will cover them. A little damp moss laid on the surface will keep the soil moist until the seeds germinate, when it must be removed. If the pot is plunged in a hotbed, or in a slight bottom heat, the young plants will soon appear. They must not be exposed too freely to the sun; a slight shade is desirable during the whole of the summer months if the plants are grown in a frame. I prefer that the back part of the frame should be turned to the south; even in this position shading is necessary. As soon as the plants are large enough to handle, pot them off singly in 3-inch pots, and as soon as the pots are tolerably full of roots they should be shifted into 5 or 6-inch pots, and again shifted when necessary. It is not easy to give instructions to those who have little acquaintance with gardening as to the best time to repot plants; the Cineraria is very impatient of being pot-bound, or being allowed to suffer from want of sufficient water. If the plants receive a check in any way, hordes of green fly are sure to attack them in the most persistent manner. They are also liable to be attacked by thrips, which, if not destroyed, will soon render the plants unsightly. The best manner of destroying these pests is to fumigate with tobacco smoke; this is far superior to any of the "blight mixtures;" for Cinerarias, Calceolarias, and other tender-foliaged plants are easily injured if the mixture is applied too strong.

The plants should be shifted into their blooming pots late in autumn, after which they should be kept near the glass. I prefer a span-roofed structure for wintering them, as there is generally a freer circulation of air in houses of this description. The only attention the plants require during winter is the removal of all decayed and decaying leaves, and if handsome specimen plants are desired, the shoots should be bent down, either by pegging them to the surface soil in the pot, or by twisting a wire round the pot close under the rim, and tying them down to it.

There is always a considerable amount of interest in watching the development of the flowers, to mark those with the most brilliant and decided colours and that approach nearest to the florist's standard. The habit of the plants is also of great importance; those having a compact, bushy habit are to be preferred. Some of the varieties have a tall, straggling habit, so that the flowers do not form a compact head. When a Cineraria is well managed, no signs of training should be perceived without looking underneath the plant; all the sticks and pegs should be hidden by the masses of flowers.

If it is desirable to propagate any of the plants by cuttings, the plants should be cut over as soon as they have ceased flowering, and they will throw up numerous young shoots from the base of the old stem; and as soon as the shoots have made three or four leaves they can be drawn out by the finger and thumb and potted singly in 3-inch pots, treating them in the same way as recommended for seedlings. When the plants are repotted, a small quantity of well-decomposed manure should be added to the compost.—J. Douglas.

ARUM MACULATUM.

I had often thought that a good variegated Arum maculatum would be very ornamental for the spring flower border, but it was long before I could find one; at last, during one of my rambles, I discovered one with an irregular marginal variegation of white, but I am afraid it will be inconstant. My little boy came home one morning last spring and said, "Father, I know where there is an Arum with a yellow edge to its leaves." Away I went on the first opportunity to the place he indicated, and sure enough there was a fine plant growing exactly as he had described it. I could see it a good way off. I dug it up, and of course brought it home and potted it, and if it preserve the same character as it presented last season, I shall feel rather proud of it. There is something striking about these Arums; the variegation is of such a bold character that they must take a front rank amongst hardy variegated spring-flowering plants when they come into the hands of the public. I have not done with Arum maculatum yet; if all be well I shall doubtless find other varieties during the coming spring. Great numbers of Arums grow in the hedges, and almost everywhere in our neighbourhood.—W. E., *Cromwell House.*

THE PRESERVATION OF APPLES.

It has been said that "There is nothing new under the sun," and certainly, if the mode of preserving Apples, some of which I send you as an example, is not new, it is, I believe, an uncommon mode to adopt—namely, to "camp" them, or, as it is called in this neighbourhood to "pie" them. The camping of Potatoes is so well known that I need but briefly refer to it. The Potatoes are placed on a smooth and dry surface, on and around them a layer of clean dry straw is placed to the depth of several inches, and over all is put a thickness of soil, say 9 inches or a foot. This protection is considered sufficient to render all safe from frost. To-day, April 13th, I have been shown by a retired gentleman farmer on this estate a quantity of Apples which were preserved throughout the winter as described above from October last. The experiment, or rather the idea, struck the gentleman more owing to necessity, which is the mother of invention, than anything else. Last year Apples were very plentiful nearly everywhere, and in this instance all the ordinary storing-room was occupied, and then a quantity of Apples remained on hand to be taken care of. The camping system was had recourse to, and the result was favourable. I am informed that in future, even if storing-room be available, the gentleman will not hesitate to adopt the same course.

My object in noticing the matter is not because this mode of preserving Apples is to be adopted by those who have ample store-room at command, but simply to show that Apples can be stored in as easy a manner as Potatoes. I am informed that when the "Apple-pie" was opened very few Apples were found to be decayed, nor had they heated. I think the variety is that called Minchall Crab, and if not that, be good enough to say what it is.—J. Gardner, *Elsham Hall Gardens, Brigg.*

[The specimens sent to us were in very excellent condition. They are the Minchall Crab.—Eds.]

GARDENERS EXCHANGING PLANTS WITH OTHER GARDENERS.

A case occurred last week at the Clerkenwell Police Court which deserves some comment. A gardener was charged with stealing his employer's clothes and Geraniums. The theft of the clothes was clearly disproved, the wife of his employer acknowledging she had sold them to him, and been paid for them! Now, after such a false charge had been allowed to be brought against the gardener, we should have had some difficulty had we been on the bench in convicting him of having stolen the Geraniums, especially as the defence was that he was not taking the Geraniums in question for any felonious purpose, but for the purpose of giving them to another gardener in exchange for cuttings of a different class. By this arrangement the prosecutor, instead of being a loser, was a gainer by the transaction. However, the Magistrate fined the gardener 40*s.* and 3*s.* costs, or a month's imprisonment.

We notice the case for the purpose of warning all gardeners never to exchange plants unless they have the clear permission from their employers in writing. We have before us a letter from a well-known head gardener, in which he says—"I have always stated that a gardener should depend on no custom, and should neither give nor take a cutting or a plant without a clear understanding. With some employers I should not consider myself safe unless the understanding were in writing. I know a case where the gardener was encouraged to beg and borrow all he could, and then was punished because he gave away what was worth 3*d.*"

Birmingham Rose Show.—We are requested to draw attention to an advertisement which appears in another column, announcing the days fixed for the next Show. It will probably be regretted by some of the Rose-growers who have been regular exhibitors in former years that other days could not have been

selected, but the Committee had no alternative but to choose the days now announced, as the Town Hall, in which the Show has always been held, is bespoken for all other eligible days.

ROYAL HORTICULTURAL SOCIETY.

APRIL 19TH.

THOUGH the special subjects of the Show were not so numerous as desirable, there was on this occasion an excellent miscellaneous exhibition, and the attendance of visitors was much better than could have been expected in such mild and fitful, but truly April weather, though, no doubt, many were attracted by the bazaar in aid of the French relief fund.

The Azaleas were, on the whole, not equal to those shown in former years, the specimens small, and many of them not in full bloom. In the open class for nine, Messrs. Lane, of Great Berkhampstead, were first with well-bloomed pyramidal plants about 3 feet high, of President Humann and Murryana; among the others, which were of much less size, were Rubens and Duchesse de Nassau, two brilliant-coloured varieties. In the nurserymen's class for six, Messrs. Lane were again first—President Humann; Cedo Nulli, purple; Bride of Abydos, white flaked with rose; and Minerva were the most noteworthy. Messrs. Dobson, of Isleworth, were second. In the amateurs' class for the same number, Mr. Wheeler, gardener to Sir F. Goldsmid, Bart., was awarded a second prize. The best single specimen was a remarkably fine example of President Humann, forming a mass of rosy blossom 5 feet, or so, in height.

For six forced Rhododendrons, Messrs. Lane were first with excellently-bloomed compact plants of Sir Isaac Newton, purple; Sir Charles Napier, rose, with a fine head of bloom; Minnie, Leviathan, and Exquisite, blush and white kinds, and Maculatum grandiflorum, rosy purple. Messrs. Standish & Co., of Ascot, took the second prize; Roseum compactum and Charles Cranham were bright-coloured and free-flowering, though not yet at their best. Miss Brisco appeared to be a good, dark-spotted, white variety. The third prize went to Mr. Woodward, gardener to Mrs. Torr, for plants forming large masses of bloom. For twelve cut trusses, Messrs. Lane were first with fine trusses of richly-coloured varieties. Equal second prizes were given to Mr. J. Woodward, gardener to Mrs. Torr, Garbrand Hall, Ewell, and to Messrs. Standish & Co. The latter had among others the fine white Rhododendron Ancklandii.

Prizes were offered for Auriculas, not only by the Society, but also by the recently instituted Metropolitan Floral Society, and the result was a better show of this flower than we have of late had near London. As, however, this part of the Exhibition will be reported on by "D., *Deal*," it will be merely necessary to state here, that for collections of twelve the prizes were awarded to Mr. Turner, of Slough, and Mr. James, gardener to W. F. Watson, Esq., Isleworth; for six, to Mr. James and the Rev. H H. Dombrain; and for twelve Alpines, to Mr. Turner and Mr. James. Mr. Turner likewise exhibited fine collections, both of the Show and Alpine kinds.

Of Pansies in pots, only one collection was shown. This came from Mr. James, and well deserved the first prize. Rev. H. H. Dombrain, W. B. Spiers, selfs, Robert Burns, and Beauty were excellent. Only one collection of Lachenalias was shown, but that was not deemed worthy of an award. For a basket of spring-flowering plants a second prize was given to Mr. Wheeler, gardener to Sir F. Goldsmid, Bart It contained Dielytra spectabilis, Primroses, Polyanthuses, Wallflowers, Tulips, Pansies, &c. Mr. William Paul offered prizes for the best three plants of Princess Christian Rose, but no exhibitor came forward to claim them.

Prominent among the miscellaneous subjects, which, as usual, were numerous, were splendid groups of Roses, exhibited by Mr. Turner, of Slough, and Messrs. Veitch. The former had a splendid specimen of Maréchal Vaillant; Miss Ingram, fine; Marie Baumann very fresh and bright, Baroness Rothschild, as well as many others, fine. In Messrs. Veitch's group Princess Mary of Cambridge was very fine, and there were beautifully-flowered examples of La France, Monsieur Noman, Victor Verdier, and Duke of Edinburgh, the whole being admirably bloomed. Messrs. Veitch likewise contributed an interesting group of Acers, as the bronze-leaved and variegated forms of Acer dissectum, Acer polymorphum, and its variety atropurpureum, the latter forming a good contrast with the lively green-leaved variety. A mixed group from the same firm contained many fine Orchids, as Dendrobium Wardii, D. Schrœderi, Cypripedium lævigatum with five spikes, and several flowers on each, Oncidium sarcodes, a fine Vanda cristata, a beautiful plant of Odontoglossum nævium, and the Lilac-like Epidendrum paniculatum. In the same group were the handsome variegated Phormium Colensoi and Anthurium Scherzerianum, with very large spathes. Mr. Denning, gardener to Lord Londesborough, sent a group of Orchids, in which were remarkably fine specimens of Cattleya Skinneri, the old Phajus Wallichi, and Arpophyllum giganteum. Dendrobium Jenkinsi on a block formed a fine orange mass, and of Cypripedium Lowii Mr. Denning had a plant with two branching spikes, each bearing four flowers.

Mr. Bull contributed a numerous group of Orchids, including Lycastes, Odontoglossums, Oncidiums, &c., together with Palms. Messrs. Rollisson, of Tooting, sent a mixed group of flowering stove and greenhouse plants and Orchids, with Palms and fine-foliaged plants.

Mr. Ware contributed a very extensive group of spring-flowering plants admirably bloomed, along with others having variegated foliage. The lilac variety of Primula cortusoides was here very fine. Mr. Osman, gardener to R. Holland, Esq., Staumore, sent stands of cut Roses, including blooms of Maréchal Niel.

From Mr. Woodward, gardener to Mrs. Torr, Ewell, came a specimen of Vanda suavis with two fine spikes, also Rhododendron Countess of Haddington in fine bloom; and from Mr. Stalker, gardener to the Right Hon. G. Hardy, Hemsted Park, Staplehurst, a magnificent specimen of Dendrobium densiflorum. Mr. Wheeler, gardener to Sir F. Goldsmid, Bart., Regent's Park, contributed a group of fine-foliaged and flowering stove and greenhouse plants; and Mr. W. E. Dixon, Norwood Nursery, Beverley, a remarkable group of stove and greenhouse plants. In this was a splendid specimen of Anthurium Scherzerianum, and a variety of the same with a duplication of the spathe on the opposite side to that which the true spathe occurs in the ordinary form of the species, and perhaps resulting from the partial transformation of the spadix, which was of less size. Magnificent specimens of Vanda suavis and Platycerium grande, together with large and fine plants of Adiantum farleyense, Phomium Colensoi, Palms, Cypripedium Lowii, and several Orchids.

Mr. Turner sent several baskets of Tricolor Pelargoniums; Mr. James and Mr. Hooper, of Bath, stands of Pansies, the latter also exhibiting Sunshine, a fine free-growing orange-buff-and-brown bedding Pansy. Messrs. Lane exhibited a very extensive group of Rhododendrons, Roses, and forced shrubs, forming a grand mass of bloom; the Rhododendrons in particular were admirable, being dwarf plants with large heads of blossom.

To myself personally this was a show of peculiar interest. Amongst my manias for florists' flowers, I think that perhaps my earliest love is still my strongest, and much as of late years the Rose and the Gladiolus have shared my attention, and, perhaps, robbed the Auricula of some of the warmth of devotion I used to feel for it, yet, after all, as the year rolls round I find the old love awakening, and the sight of a stage of Auriculas stirs up feelings that even a rosarium or a bed of Gladiolus fails to do. It may be that difficulty adds something to this feeling. Everybody who has soil suitable can grow the Rose, everybody can make a soil suitable for the Gladiolus; but the Auricula requires patient care and skill, watchfulness all the year round, but I think it amply rewards the cultivator for his pains. I had another point of interest in to-day's Show, it was the first time that the Metropolitan Floral Society had offered prizes, and to see the grand old flower taken up by a new agency was a pleasure indeed.

The season, I hear on all sides, has been unfavourable to the Auricula. It delights in a cool atmosphere, and the intense heat of last summer necessitated such constant watering, that the good was washed out of the soil. The plants had not the vigour they ought to have had. Very many plants, all the growers tell me, like my own, failed to send up trusses at all, and many that did so contained only two and three pips. The result of this was manifested to-day, for although the Auriculas shown were very fine, yet in some instances the trusses were small; they were, however, very true to character, and this is a great point as showing what they may be in size. I had a bloom of Ne Plus Ultra on my stage with three pips on it, each of which measured 2 inches across, but then this size was gained at the expense of refinement, and I should no more have dreamed of showing it than of flying, for, say what people will, the eye even of those not educated to it, is attracted more by refinement and beauty than size.

Of the Royal Horticultural Society's prizes for twelve Auriculas (open), the first prize was awarded to Mr. Turner for the following varieties:—Omega (Turner), Colonel Champneys (Turner), Unique, Mrs. Sturrock, Richard Headly, Miss Martin, Morning Star, Miss Giddings (Read), Competitor, Trafalgar, and Galatea. With the exception of Richard Headly I regarded these flowers as somewhat coarse; owing, doubtless, to very good feeding, the foliage was splendid. Mr. James, gardener to F. W. Watson, Esq., Isleworth, was second with a seedling, Meteor Flag, Mrs. Sturrock, Bright Phœbus, Blackbird, Royal Purple, General Bolivar, Mrs. Smith, Mrs. James, Meteor, Alma, and Mayfield. In the class for sixes, amateurs, the first prize was awarded to Mr. James for Bright Phœbus, Mrs. Smith, True Briton, Ne Plus Ultra, Lovely Anne, and Mrs. Sturrock; the second to the Rev. H. H. Dombrain, Westwell Vicarage, Ashford, Kent, for George Lightbody, Imperator, Duke of Wellington, Hannibal, True Briton, and Conqueror of Europe.

There was a smart competition for the prizes offered by the Metropolitan Floral Society. The first prize for six varieties, distinct, was awarded to the Rev. H. H. Dombrain for the following:—George Lightbody (very fine), Redwyn's Metropolitan, Martin's Mrs. Sturrock, Traill's Mayflower, Miss Willoughby, and Popplewell's Conqueror. The second was awarded to H. Little, Esq., Cambridge Villa, Twickenham, for Duke of Cambridge, Richard Headly, General Neill, Ne Plus Ultra, Lancashire Hero, and Eclipse. In the single class the prizes were as follows:—Green edge: First, Mr. James, for Oliver's Lovely Anne; second, Mr. Turner, for Traill's Prince of Greens; and third, Mr. Butcher, for Mrs. Butcher. Grey edges: First to Mr. Turner for Richard Headly; second to Rev. H. H. Dombrain for George Lightbody; third to Mr. James for Superb. In White edges: The first to Mr. James for Ne Plus Ultra; the second to Mr. James for Earl Grosvenor; the third to the Rev. H. H. Dombrain for

Catharina. In Selfs: The first to Mr. Turner for Bessie Bell; second to Mr. James for Mrs. Smith; and third to Rev. H. H. Dombrain for Pizarro. There were also some very beautiful Alpine Auriculas exhibited by Mr. Turner and Mr. James. Some of the newer varieties exhibited by the former gentleman showed a great advance in form, size, and colour. I must leave others to tell of the other features of the Show, and can only hope that as the Metropolitan Floral Society has made a good commencement, so it may be encouraged to proceed, and that at another spring show we may see an accession of exhibitors.—D., *Deal*.

Fruit Committee.—G. F. Wilson, Esq., F.R.S., in the chair. Mr. Cadger, The Gardens, Lutou Hoo, sent fruit of the seedling Cucumber exhibited at last meeting, in a younger state than those last sent. The Committee named it Luton Hoo, and awarded it a first-class certificate. Mr. Turner, of Slough, sent a plant of his Prolific Black Spine Cucumber in a pot. The plant was only a yard high, and had seven good fruits upon it. It was awarded a special certificate. Mr. Rendle sent specimens of Endive and Lettuce grown under his plant protectors at Belvoir; members of the Committee remarked that they had better examples grown in the open air without protection. Mr. Barron brought from Chiswick specimens of Dandelion of the selected stock obtained by the late Madame Vilmorin of Paris. One was named Cœur plein, and the other Broad-leaved. They were very large, and produced a great profusion of leaf and root. Mr. C. M. McCrow, the Gardens, Nash Court, Faversham, sent two Queen Pines, produced on plants two years old from the sucker, each weighing 4 lbs. They were awarded a special certificate.

Mr. C. Osman, The Gardens, Stanmore Hall, sent a dish of Strawberries, and Mr. Stalker, of Hemsted Park, Staplehurst, sent a dish of good Keens' Seedling. Mr. Rivers, of Sawbridgeworth, sent shoots of Apricots from an orchard house densely set with fruit, and also a collection of March and April Apples in very sound condition. The Spring Ribston was a little past in flavour, but sound in flesh. Reinette du Canada was more highly flavoured, and equally sound; Duke of Devonshire very rich; Brownlees' Russet very tender in flesh, and with a fine brisk flavour. Cornish Aromatic was rich and tender; Newtown Pippin very firm, juicy, and of excellent flavour. Sturmer Pippin was equally firm and juicy, and rather acid; Claygate Pearmain very good. Lord Burghley was high-coloured and handsome, very solid and firm, with a fine flavour; Mannington's Pearmain tender-fleshed, a little past, but with good flavour; Allen's Everlasting, an excellent Apple, firm, and full of juice, with a delicate flesh, and fine flavour; Melon Apple, rather woolly and past. Braddick's Nonpareil was flat and tasteless; Reinette de Friesland, a fine, fresh, briskly-flavoured Apple. A collection of very handsome and well-kept kitchen Apples was also exhibited. A special certificate was awarded to each collection. Mr. Rivers also sent three dishes of large and well-coloured Uvedale's St. Germain Pears equal in colour to those usually imported under the name of Belle Angevine.

Mr. Gardiner, of Lower Eatington Park, Stratford-on-Avon, sent a collection of thirty-four varieties of Apples all named, to which a special certificate was awarded.

Floral Committee.—Mr. J. Fraser in the chair, On this occasion the novelties were not very numerous. Foremost among them was Cypripedium niveum from Mr. G. Ward, gardener to D. Berrington, Esq., Pant-y-Goitre, Abergavenny. This was remarkable in every sense—remarkable for its free flowering, one of the specimens having ten flowers, which from the compactness of the plant formed quite a close mass of flowers, and remarkable from its entire distinctness of colour from any other Ladies' Slipper which we know, being pure white, with some faint dottings of purple, externally more marked, and with delicate lemon blotches in the lip. This received a first-class certificate. A like award was made to Mr. Denning, gardener to Lord Londesborough for Odontoglossum odoratum, yellow, spotted with brown, not, however, remarkable for its beauty. He also exhibited a Sarcopodium from Rangoon, with a large showy flower, buff lined longitudinally with crimson, and a pretty lilac variety of Epidendrum ibaguense.

Mr. Dixon, nurseryman, Beverley, received a first-class certificate for his singular variety of Anthurium Scherzerianum named Dixoni, which has been already noticed; and similar awards were made to Messrs. Veitch for Acer japonicum dissectum and ornatum, two beautiful-leaved varieties shown also in a collection previously noticed. Mr. Fairbairn, gardener to J. Noakes, Esq., Lewisham, sent seedling Rhododendron The Bride, with large pure white flowers, apparently a hybrid raised from some of the Indian species. This had a first-class certificate and promises to be an acquisition. Mr. Chambers, gardener to J. Lawrence, Esq, Beddington, had special certificates for cut blooms of Rhododendrons Dalhousiæ and Beaumontia grandiflora, the large white flowers of the latter being especially beautiful, though those of the former were not considered to equal the kind figured by Dr. Hooker.

Mr. Turner, of Slough, had first-class certificates for Tea Rose Belle Lyonnaise, a seedling from Gloire de Dijon, to which it bears considerable resemblance, but, as shown, of finer form and rather different in colour; and for Alpine Auriculas Sultan and Marquis of Westminster, reddish maroon, of fine form. A splendid scarlet Pink called Princess Louise, from Mr. W. Lee, also received a first-class certificate. This was shown at the previous meeting, but not equally fine. Mr. Stalker, gardener to the Right Hon. G. Hardy, M.P., had a special certificate for his specimen of Dendrobium densiflorum already noticed; and Mr. Williams, Holloway, for a group of Orchids, Palms, &c. In this was Restrepia antennifera, a singular and pretty little insect-like Orchid. For Maxillaria luteo-grandiflora in another collection from the same exhibitor a first-class certificate was awarded. The flowers are brownish yellow, purple, and white, and more effective than those of many of the genus. Mr. Williams also exhibited Amaryllids and Palms, which must be seen again.

Mr. Bull had a first-class certificate for Azalea Marvel with small magenta flowers. M. Van Houtte, of Ghent, sent a beautiful collection of new Indian Azaleas, admirably grown and flowered, and very striking, though deficient in some qualities. These were much admired, and the task of selection was difficult. The Committee gave first-class certificates to Marquis of Lorne, salmon red; Comtesse de Beanfort, rosy crimson, with a dark crimson blotch in the upper petals; Alice, a fine semi-double, bright rosy crimson; Président de Ghellinck de Warlle, semi-double, rosy crimson; and George Loddiges, salmon red, with a large deep crimson blotch.

Of other subjects shown there were Ferns planted on and in imported stems of Tree Ferns, from Mr. Woodward, Ewell, after the manner pursued at the establishments of Messrs. Veitch and Mr. Williams; seedling Zonal Pelargoniums from Mr. Pecke, nurseryman, Tunbridge Wells; and a white variety of Azalea pontica from Mr. Tanton, of Epsom. Azalea obtusa, from Mr. Woodward, formed a pretty pyramid of red blossom.

General Meeting.—W. Marshall, Esq., in the chair. After the election of twenty-two new members the awards of the Committees were announced by the Rev. M. J. Berkeley and Mr. Wilson, Chairman of the Fruit Committee.

The Rev. M. J. Berkeley then said the Rev. Mr. Ellacombe, of Bitterne Vicarage, Bath, had sent a most interesting collection, although it was rather late in the season for that neighbourhood; others had come from Mr. Moore at Chelsea, and Mrs. Lloyd Wynne. Mr. Berkeley then remarked that Hellebores lividus and orientalis, of which examples were produced, were good plants for shrubberies and planting among low trees, and that H. fœtidus was also so, though formerly, where plentiful in Northamptonshire, it had been everywhere grubbed up. He also exhibited a spike of Ornithogalum nutans. This he said was commonly admitted, when its shoots were pushing, to the markets at Bath as Asparagus, for which it formed a very good substitute. He next referred to a very important communication from Mr. Alfred Smee, respecting the heating of horticultural structures. In this Mr. Smee stated that a double circulation of water could be established in one pipe, which could, therefore, be made at once a flow and return; that such circulation was rapid, provided the flow were carried in at the top of the circulation pipe, the return at the bottom, but not so as to cross each other; that he had tested this system in the case of a frame, and found it very successful; and that on putting the question to Mr. Easton, the eminent engineer, whether such a thing had been done, the latter answered that it had by one of his pupils, and much to his (Mr. Easton's) surprise it had worked well. Mr. Berkeley again produced a Morel which had been sent to him, and said this fungus appeared to be more than usually common this season, and concluded by calling attention to the fact that this year the Vines at Melbourne had been attacked to a frightful extent by a disease closely resembling that which occurs on the Peaches and Nectarines in Kent, and which, like it, seems entirely due to climatic influences.

Mr. Bateman having made a few remarks on the subject of the bazaar, and stated that Lord Londesborough had devoted the flowers of his Orchids in aid of the fund for the French, the proceedings closed with the announcement that the next meeting would be held on May 5th.

LIFTING BROCCOLI IN THE AUTUMN.

It appears that there are various opinions about the efficacy of this operation, some asserting that they derive no benefit from it, and one writer affirming that it is positively injurious. My own experience is quite opposed to this. I grow upwards of 12,000 plants every winter, and I regret to say that there are not more than 2000 saved. Owing to our comparative immunity from frosts during the recent winters, I neglected lifting Broccoli, except on a small scale, and the results were such as to leave no doubt in my mind as to its efficacy. I had about one thousand plants of Backhouse's Winter Broccoli; one half I had transplanted, the other half were allowed to stand. Out of those which stood not one escaped, whilst of those that were laid-in only about ten per cent. succumbed. These I have been cutting for two months. This is a useful variety, and when it can be had true, is one of the best of winter Broccolis. My other sorts were not laid in, and of these Dilcock's Bride stood the best; Penzance and Ambler's Early went entirely; Richmond Late White stood next best. Curled Kale and Brussels Sprouts were not in the least injured.

The prevailing opinion is, that inclining the plants towards

the north is the means of saving them. No doubt, it is a good plan, especially for early kinds, but in my opinion transplanting alone is the chief cause of the operation saving the crop, otherwise why do the late kinds give way long before the heads appear? With me the largest and most luxuriant suffered most, the smallest and poorest suffered least; and the only conclusion I can draw is, that the prevalence of juices in the former renders them more liable to injury; but lift them, and there is a timely arrest of succulence, and they become tough, and as it were ripened—it is well known that ripened wood always stands the frost best—therefore, they escape injury; but if inclined to any point of the compass besides the north, I believe the result would be the same. It is, however, another question when they begin to form heads, then the north must have the preference. I am so thoroughly convinced of the advantage of lifting, that I shall always do so in future. Although it is generally but once or twice in a decade that there is such an utter failure, we know not when it comes, and when we know the remedy we should be wise to be prepared for the worst.—A Yorkey.

A LARGE CEDAR OF LEBANON.

A fine tree of this Cedar stands in the grounds of Barham Court, the residence of R. Leigh, Esq., a few miles from Maidstone, situated on the banks of the Medway. There are also some other noble specimens both of native and other trees. Although the tree referred to is only in its infancy, yet it is densely clothed from bottom to top with foliage of the deepest green, and almost without a dead twig, there being none near the outside, and yet it will bear comparison with most of its kind that I have met with. The circumference of its trunk at the narrowest part between the root claws and the branches is 23 feet. The bole is short, scarcely 6 feet high, and it is the smallest part of that which measures as above, and I may further observe that there are no projections nor inequalities that would give an increase to what is fair measurement; on the contrary, the bole is as circular and smooth as those of most Cedars. The tree appears to have lost its leader at the height of about 6 feet, and to have pushed out a number of rival ones, several having the proportion of good-sized trees, and being of upright growth; others have been thrust outside, and occupy the position of branches, and some of these touch the ground. The height of the tree I did not ascertain, but it must be considerable, for the centre shot up like a blunt cone rather than the semi-hemispherical outline which the tree often assumes. I imagine that a hundred years hence this tree will be a magnificent object, for it seems to be still growing fast.

As an example of how rapidly the Cedar of Lebanon grows in suitable situations, there was pointed out to me another specimen which one of the garden men had planted about forty-five years ago. This, in its outline, resembled an elongated beehive, the top being rounded; a single upright bole was clothed with healthy branches to the very ground, so that it was not without difficulty that we could put a string round the trunk at about 3 feet from the ground; we found it was there 8 feet 10 inches in circumference. As the tree is very healthy and thriving, it is likely at some future day to be a fine object. It will be well for those who contemplate planting for future effect to bear in mind that whatever may be the merits of more recent introductions, the Cedar of Lebanon, from the fact of its being to a certain extent established amongst us, ought to be planted in greater numbers than any other tree of a similar description.

As a further illustration of the quick growth of this Cedar, I have been led to measure some of the trees planted in 1827 in the grounds at Linton Park, and I find there are some even larger than the tree at Barham Court, for in a group of eight trees—all that were planted at the time just mentioned—the respective circumferences in the smoothest place at 3 feet from the ground are 9 feet 3 inches, 8 feet 11 inches, 8 feet 8 inches, 8 feet, 7 feet 11 inches, 7 feet 6 inches, 7 feet 5 inches, and 6 feet 6 inches. The spread of branches of the largest-stemmed tree is 69 feet.—J. Robson.

NOTES AND GLEANINGS.

Payment by Postage Stamps.—We have corresponded with the Postmaster-General, and received a reply similar to the following which he sent to the Seed Trade Committee:—"To diminish as far as possible any inconvenience that may arise from the restricted use of postage stamps for the purpose of remitting small sums, the present system will be continued until the 30th June next; but, as so much evil has resulted from it, no postmaster will be permitted to purchase postage stamps from the public after that date."

—— The following Prizes for Collections of Economic Entomology, are offered by The Royal Horticultural Society:—

1. A Prize of £10 for the best Collection of British Insects injurious to any one plant, as the Oak, Pine, Cabbage, Wheat, &c. The choice of the plant to be left to the competitor. The insects to be shown as much as possible in their various stages of development—eggs, larva, chrysalis, and perfect insect. In judging, a preference will be given to those collections which most successfully illustrate the life history of the insect, and exhibit the mischief done, whether shown by specimens, drawings, models, or other means. (Examples of the application of drawings, models, and specimens to this purpose may be seen in the Society's Collection in the South Kensington Museum.)
2. A Second Prize of £3 for the second best Collection.
3. A Prize of £5 for the best Miscellaneous Collection of any branch of British Economic Entomology, similarly illustrated.
4. A Second Prize of £2 for the second best Collection.

The Collections are to be sent to James Richards, Esq., Assistant Secretary, Royal Horticultural Society, on or before the 1st of May, 1872, each collection bearing a motto, and a separate sealed envelope, with the motto on the outside, and the name of the competitor inside. The Society is to be entitled to take from any of the Collections sent in, whether successful or not, whatever specimens or illustrations they may choose, at a price to be fixed by the Judges. The Judges to have power to refrain from awarding the Prizes, should the Collections seem not worthy.

The following are extracted from *Nature*:—

—— The Malvern Naturalists' Field Club has issued in a neat volume its Transactions for 1853-70. It contains a large number of papers mainly illustrative of the natural history of the district, including catalogues of local birds, mollusca, lepidoptera, and fungi, with sketches of the geology of the Malvern Hills, and observations on the meteorology of Malvern. There is also an interesting sketch of the proceedings of the Society from its commencement in 1853 to the close of 1868, by the Rev. W. J. Symonds, F.G.S., President; and a long paper on "The Forest and Chace of Malvern: its Ancient and Present State; with Notices of the most remarkable old Trees remaining within its Confines," by Mr. Edwin Lees. This is illustrated by several well-executed engravings of some of the trees referred to.

—— There is a plant in New Granada which, if our ink-makers could only grow in sufficient quantity in this country, would be a fortune to them. The plant in question, Coriaria thymifolia, is commonly known as the Ink Plant, and it is simply the juice that is used without any preparation. Its properties seem, according to a tradition in the country, to have been discovered during the Spanish administration. A number of written documents destined for the mother country were embarked in a vessel, and transmitted round the Cape, the voyage was unusually tempestuous, and the documents got wetted with salt water, those written with common ink became nearly illegible, whereas those written with "chanchi" (the name of the juice) remained unaltered. A decree was therefore issued that all government communications should in future be written with the vegetable juice. The ink is of a reddish colour when freshly written, becoming perfectly black after a few hours, and it has the recommendation of not corroding a steel pen so readily as ordinary ink.

—— A new Wellingtonia gigantea, or "big tree," 40 feet 4 inches in diameter, has been discovered lately near Visalia, in Southern California. This is thicker by 7 feet than any other that has yet been found. A section of one of the "big trees" is now exhibited in Cincinnati, which is 76 feet in circumference, and 14 feet high; and, standing on the floor of the hall, it gives one a perfectly clear idea of the enormous size of the tree from which it was taken. The section was cut last year in the Mariposa grove, about two hundred and fifty miles south-east of San Francisco, and far up the western slope of the Sierra Nevada mountains. It was divided and hauled a hundred and forty miles to Stockton, on three waggons by seventeen yoke of cattle.

"ALPINE PLANTS."

We have received Part viii. of Mr. Wooster's "Alpine Plants," the previous numbers of which we noticed a few weeks ago. It contains three plates representing seven subjects, all of which are faithfully drawn. They consist of Crocus Boryanus, Dryas octopetala, Scutellaria alpina *var.* lupulina, Stenactis speciosa, Andromeda hypnoides, Polygala paucifolia, and Cheiranthus alpinus. Well as the execution of the figures has been carried out, we cannot but suggest to the artist that some other mode of treating white flowers is desirable. In the figure of Dryas octopetala, for instance, the heavy shading gives an impure character to the naturally fine white of the flower, and suggests a heaviness and solidity which does not exist in

nature. Would it not be better to draw white flowers on paper tinted by lithography, the white spaces occupied by the flowers being left white ?

SOME PREDATORY INSECTS OF OUR GARDENS.—No. 7.

It is an observation almost rubbed threadbare to say that an object varies much according to the peculiarities of the eyes which contemplate it; and the only excuse which can be made for its repetition is, that palpable as is the truth of it to most, there are some persons slow to receive the explanation which it affords of certain seeming contradictions. I was reminded of it now when considering the diverse effects produced in the minds of men by the appearance of the first butterflies of spring. The poet looks at them with rapture, and rushes, with a new inspiration to his desk, to pour forth his thoughts in verse; the naturalist surveys them with interest, and with a degree of pleasure also; and the gardener, he—why, he feels inclined to anathematise them as the detestable parents of a prospective brood of devourers, which will ere long make some of his Cabbages and Cauliflowers "small by degrees," but not "beautifully less," though as yet a moiety remains of those engaged in horticulture who have not learnt this relation between cause and effect, and who gaze at the white butterflies fluttering in the April sunshine, and do not connect them with the swarming caterpillars of a month later.

The earliest butterflies we see in the spring are some of those belonging to the Vanessa family; indeed even in January or in February we may see a Peacock or a Tortoiseshell careering about in company with the more uniformly coloured Brimstone, and looking rather unseasonable. The first species, however, which emerges from the chrysalis is usually the Small or Garden White (Pieris Rapæ), which may be reckoned with good reason amongst the harbingers of spring. That some individuals belonging to this species lived through the winter in the imago or butterfly condition, was the belief of the older entomologists, and it may possibly be sometimes the case, though I have seen no positive proof of it. The overwhelming majority of the specimens we see in April have, at any rate, not long emerged from the chrysalis, as is evident upon an examination of their wings, which have a freshness not observable in hybernated butterflies. This circumstance is advantageous, as affording an opportunity for their destruction ere they can wing their flight, since the chrysalids are not concealed —or at least only slightly so—as they are attached to some wall or paling, or, rarely, to the trunk of a tree. Seeking out and destroying these, in the winter or early in spring, in those places where the caterpillars have been observed the preceding summer or autumn, might be regarded as tedious work, yet it would certainly pay in its results in so far as cultivated plants of the Cabbage family were concerned. Probably each female butterfly deposits 150 eggs at least; then the destruction of each hundred in the chrysalis stage might be reckoned as equivalent to the extermination of 7500 caterpillars, and though many out of such a number would be destroyed by various causes before they could do much damage, a good per-centage would attain maturity. We are, it must be remarked, rather fortunate in these islands so far as our butterflies are concerned. We have but a small number of species native with us—a fact which it has been attempted to explain by several theories, none to my thinking at all satisfactory—and of these only two or three are at all injurious to cultivated plants. Certainly the species before us is markedly if not extensively so, the caterpillars not only feeding on the plant which gives the name to the species, but attacking almost any of the Cruciferæ, and showing themselves also most years in our flower gardens to feed upon various annuals and biennials. In my own domain, I have noticed that Stocks and Mignonette are especially favoured by their presence.

The eggs of Pieris Rapæ are sufficiently large to be noted by the unassisted eye, resembling those of P. Brassicæ, which have been often figured, only not quite so elongated. They are marked with ribs and also striated, being disposed on the leaves in patches of half-dozens or dozens. The first proceeding of the newly hatched caterpillars is generally the devouring of the empty egg-shells—an act of apparent indiscretion, we might say, as it seems likely that so hard a substance would not suit very well the delicate digestive apparatus at that stage; however, the successful growth subsequently proves that the act is by no means suicidal. The spring brood of larvæ appear within a fortnight after the eggs are laid, the primary object of their attack being very often the varieties of Cauliflower and early Cabbage, they being at first hardly noticed from their small size and pale colour. Newman describes, with his usual accuracy, the appearance of these caterpillars until the second change of skin. "They are semi-transparent, the hairs conspicuous, and each has a spherical head like a pin; indeed they much resemble so many minute pins stuck into the skin, or, still more exactly, those minute stalked glands which are commonly observed in the stalks of Ferns and other plants. There are a number of white warts on each segment." The rate at which these caterpillars grow depends greatly upon the temperature, easterly winds and heavy rains retarding their progress, and even killing a considerable number. With favourable weather they proceed very rapidly towards maturity, and they may be ready to become chrysalides in three weeks' time from emergence. Attaching themselves at a variety of angles to wooden surfaces not far from where they have fed up, these develope into a second brood of butterflies, which continue on the wing for a rather longer period than the flight we see now. The chrysalis, it may be noted, is of different shades, of white, light and dark brown, and occasionally green, and has been conjectured to be adapted to the particular hue of the object to which it is fastened, so as to favour concealment; the supposition is hardly sustained by experience, though we have other undoubted instances of insect disguises. No fixed date can be named for the appearance of the second brood of caterpillars, and in some seasons there seems to be a succession of broods, and caterpillars, chrysalides, and butterflies may be found, if not in the same garden, at least within a distance of a few miles.

In some years Pieris Rapæ is comparatively scarce, it was so in 1869, though in the preceding remarkably warm summer it abounded in most places; in fact, that year produced many curious phenomena both in plant and insect life. Thus, there were caterpillars of this species feeding at the west end of London up to the middle of June, which was later than usual for the first brood, the appearance of the butterflies having been retarded by a cold April. Early in July, near Gravesend, both larvæ and chrysalides were found, and the butterfly was also out. At Fulham, on the 22nd of that month, there were hosts of larvæ crawling on the palings to enter the pupa state. On August 1st, in some places about the metropolis, the butterflies flew almost in swarms, both in fields and along the roadsides, settling with eagerness in parties of six or eight at any spot where water had been spilt, and allowing the observer to come quite close. Three weeks afterwards they were nearly as numerous as at the commencement of the month, and another arrival of larvæ were destroying the parched leaves which yet remained in our gardens, many of them exhibiting signs of the attacks of parasites. On the 10th of September some half-grown caterpillars were seen feeding. Many butterflies were flying throughout that month and October, individuals which, in the general way, would not have come forth until the spring, accounting for the scarcity which ensued in 1869; nor had the species recovered itself even in 1870.

How is the species we are discussing to be kept under by the gardener? This admits of several answers. The hunting-out of the chrysalis is a good plan, as already hinted. Capturing the butterflies by means of a net has been tried, but this involves an expenditure of time without producing an equivalent result, nor is it very probable that the eggs will be detected in any quantity just at the right moment. There are some caterpillars which can readily be shaken off their food plants, but that of P. Rapæ holds on pretty firmly. When a greater force is applied, then they roll into a ring, soon, however, beginning to crawl again. Children may be sometimes employed with advantage to pick them off, and the birds if let alone will render the gardener much service. Some caterpillars are destroyed by the same parasite which attacks the caterpillars of P. Brassicæ, a larger number still by the maggot of a dipterous insect. Rennie, in his interesting volume on "Insect Transformations," states that in his researches in some fields at Islington (only fancy, there was actually a man living not long since who had seen fields there!) he had observed that the caterpillars of P. Rapæ selected in preference the wild brassicaceous plants, neglecting the cultivated species. With all respect, however, I do not think that this solitary instance suffices to build a theory upon. There may have been in this case some means taken to prevent their attacking the Cabbages and Broccoli, otherwise I believe the mild flavour of the cultivated species proves more to the taste of the caterpillars of P. Rapæ than the harshness of the wild species.

In April the horticulturist is looking for the appearance above the earth of his first sowing of Peas and Beans. So also are other living things, but with rather different views. A host of weevils infest these plants at every stage of their growth, and some believe them nearly as injurious as the hateful aphis. If the weather is dry, especially, we may expect to find some of the species of Sitona, such as lineata, the striped Pea weevil, and also crinata and canina, which nibble at the young leaves and stems when they first rise above the ground. The plants which have sprung up from the autumn and winter sowings are equally subjected to their attacks. As a writer upon the subject has observed, the gardener has a twofold object before him—to destroy the perfect beetle, and to protect the plants from it. Traps, such as small bundles of hay, have been laid between the rows, into which many of the beetles will creep at night, and they may be shaken or brushed off the plants when they have attained some size. From the small dimensions of these and other insect enemies, their capture and destruction is necessarily more difficult than is the case with larger species.—J. R. S. C.

Sitona lineata.

GREENHOUSE PLANTS.—No. 2.

A GREENHOUSE is frequently constructed without proper provision for climbing plants, so essential for shade in the summer; and to prevent the roof presenting a bare appearance it is necessary to cover a part of it with climbing plants combining elegance or gracefulness of growth with beauty of flowers. I shall therefore commence with climbing plants, and shall endeavour to give each plant its proper place.

In all greenhouses I consider there should be borders for the plants which are required to cover the pillars, wall-trellises, and roofs, and these borders should be as carefully arranged and prepared as the best Vine borders, differing from these only in the requirements of each subject as to soil being consulted. Borders for climbers need not be so wide and so deep as those for Vines, and yet each plant must have sufficient space for its roots, so that it may be kept in good health for several years. In some greenhouses few plants would be required if these were grown in borders instead of in pots; but I consider this a cogent reason for not continuing to grow in pots plants which, when so cultivated, we know can never attain their full development and beauty of foliage and flowers. Indeed, we cram and dwarf everything into so small a compass that the Chinese and Japanese can hardly beat us in this respect. It is of frequent occurrence that two, three, or half a dozen climbing plants grown in pots occupy room on a stage, and yet cover no more space on the roof than one plant in a border, though the latter would attain the same perfection as the plant in its natural habitat—not that there are no climbers suitable for pot culture, and such for covering small trellises are very useful, but for roof-covering I consider those so grown all but useless. They do well whilst young, but when attaining their greatest beauty their branches are so closely entwined to the wires that transferring them to larger pots is difficult without cutting them down and beginning the work over again.

Greenhouses differ so much in construction and form that it would be difficult to show the border arrangements of even those which I have seen. I shall therefore sufficiently explain what I mean by one or two examples.

Fig. 1 is a section of a greenhouse with a border, *a*, in front, for climbers, 3 feet in depth and the same in width. There is a drain along the bottom and centre, and over it 9 inches or a foot thick of drainage, leaving about 2 feet for compost. The front wall is constructed with openings to allow of the roots going outside should there be Vines, the finest of all climbing plants. The border will need to be divided by cross walls, allotting to each plant the proper space for its roots, according to the extent of the house covered. Along the back there is also a border, *b*, for plants to cover the back wall, taking advantage of the space beneath the pathway, *c*, by having the wall, *d*, pigeon-holed to admit of the roots of the plants passing from *b* to *c*. This border will need to have cross walls like the front to confine the roots to their due limits.

This house being of considerable dimensions, to successfully cover the roof space, the front 20 feet, exclusive of the wall and upright front, should be planted with the freest-growing climbers, and the back wall, 12 feet high, will afford scope for free-growing plants; whilst for the back of the roof plants that grow vigorously will be suitable, as they must, in order to reach the roof, pass up the back wall. The house is 27 feet wide, exclusive of the walls, and there is a walk all round.

Fig. 2 is the ground plan of a curvilinear greenhouse with sides of considerable elevation, and there are borders 3 feet wide all round, and two beds in the central part. It is presumed that the house is for Camellias, and that the plants are planted out both in the side and central borders, and at the ends. Camellias being plants that require shade, no description of house that I know admits of a greater display of climbers, and these will not interfere with the successful treatment of Camellias. To whatever use the house may be devoted, if the plants are planted out it will be necessary to keep the roots of the climbers from extending into the other part of the border by divisions. Slate and stone answer well, but tiles may be used, and take up less room than bricks. The divisions are shown by the small half-circles in the side borders, those next the outside being for the plants to cover the roof, and those on the side next the walk for plants to cover trellis arches over the walk, a corresponding plant being on the opposite side of the path. For this purpose space is taken from the two centre beds on the side next the walk all round, and separated from the border by a 4½-inch wall with a stone coping. The arches cross the walks, interfering in no way with the plants, and thus economise space while increasing the beauty of the house. The four small circles are for climbers. If the sides are staged for pot plants, then straight cross walls, as shown by the dotted lines, answer for divisions.

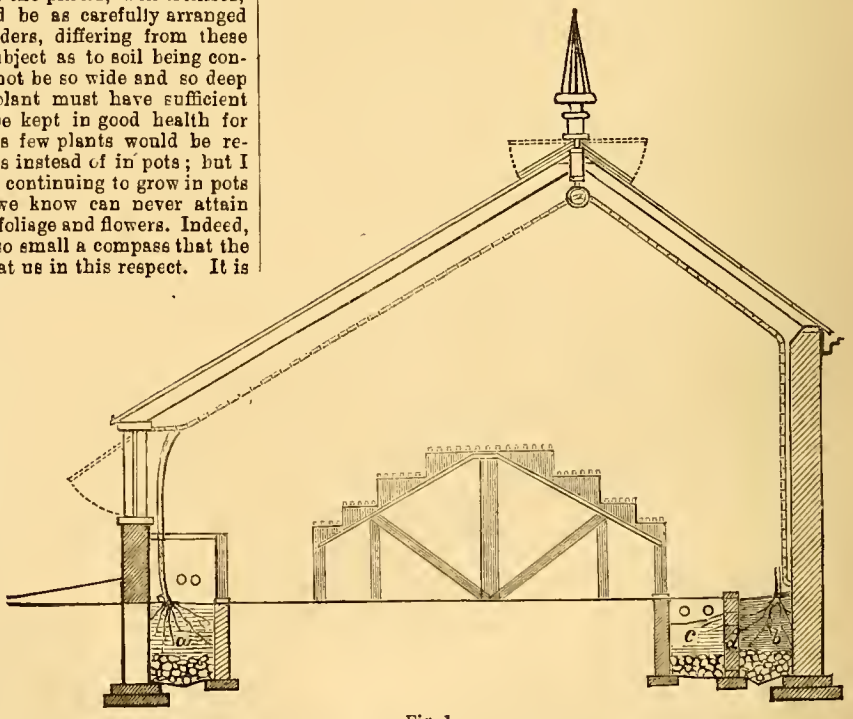


Fig. 1.

Enough will have been said to show the arrangement of the

borders for climbing plants, the essentials of which are to keep the roots of each separate, so that every plant can be supplied

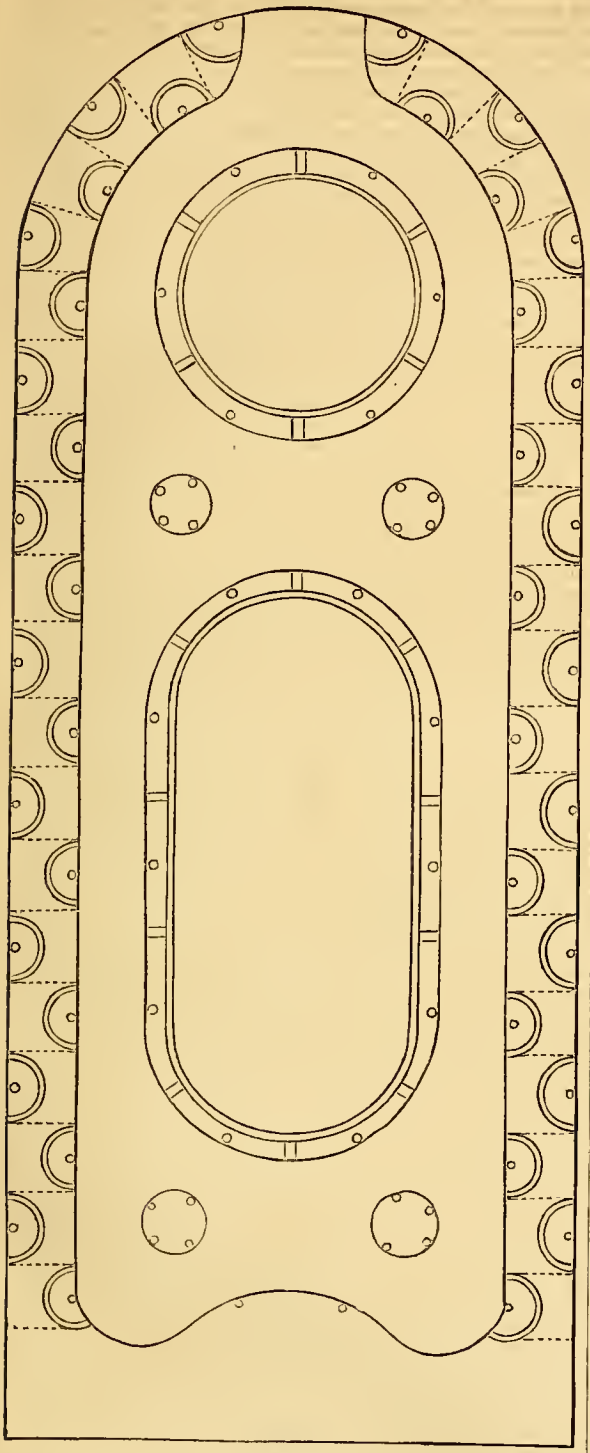


Fig. 2.

with the requisites for its successful culture without interfering with its neighbours.—G. Abbey.

WORK FOR THE WEEK.

KITCHEN GARDEN.

Box and other edgings having been repaired, the gravel walks should either be turned over, or a coat of fresh material added after loosening the old surface. Let the whole be levelled and well rolled, repeating this particularly after rain, till the walks become perfectly solid. In reforming them, round them slightly in the middle for rain to pass easily to the sides, but no more than this, except in very wet situations. The walks and edgings having been put in order, if the vegetable quarters have been manured for the season according to former directions, the cropping and general management during the summer need not prevent any deviation from neatness and good order. Run the hoe between the rows of all crops as soon as they are sufficiently advanced to enable the operator to distinguish the rows. Earth up *Beans* and *Peas* as they advance, and stick the latter. A sowing of *Kidney Beans* may now be made; selecting a piece of dry, light soil with a south aspect, draw the drills 2 feet apart, and drop the Beans 3 inches apart in the row. A few may be sown in a box, to be placed in heat and transplanted when all danger from frost is gone. Thin *Carrots*, *Spinach*, and early *Turnips;* this should always be done in due time, and at twice; in the first instance leave double the number you intend to retain as a permanent crop, to meet accidents that young seedlings are liable to, and thin them to the proper distance when such danger is over. Sow *Scarlet Runners* and *Haricot Beans* on well-prepared and dry ground; it will be as well to sow only half the quantity likely to be required, and the remainder a week later, for should the weather prove cold and wet they may not vegetate well in cold situations. *New Zealand Spinach* may be sown in heat for transplanting in May, and *Vegetable Marrows* and the *Ice Plant*, where the latter is required for garnishing.

FRUIT GARDEN.

All trees on the walls should now be looked over and have their wood thinned while in the bud, taking off with the finger and thumb all foreright buds, and others that are not properly situated for laying in. Thin also the young canes of Raspberries to the number necessary for next year's crop, by this means the canes will be stronger, and will ripen better.

FLOWER GARDEN.

The cultivation of annuals for garden decoration has, in some degree, given way to the more permanent class of bedding-out greenhouse plants, yet some of the former will always find a place in the best-arranged gardens, and a pretty general selection should at the same time be grown for filling up vacancies in borders of herbaceous plants, bulbs, &c. In the margins of shrubberies, sown so as to occupy the space between the turf and the shrubs, annuals not only hide the bare soil, but also produce a gay appearance in summer at a trifling expense. For this purpose the present will be a favourable time for sowing, the ground having previously been well dug and prepared. The varieties are so numerous that it is scarcely requisite to give names, I will, therefore, only observe that the seed should be sown thinly, and as soon as the plants are large enough they should be well thinned, to allow a free growth. No idea of the beauty of annuals can be formed by the stunted patches we so generally see, owing to the common practice of sowing the seed in a patch, and allowing, perhaps, fifty or more plants to grow in a space where two or three only should have remained. Annuals intended for beds should be such as continue a considerable time in flower; those of dwarf habit being placed near the walks, and the taller-growing ones at a greater distance. Among the former may be named Nemophila insignis, Clintonia pulchella, some of the dwarf Campanulas, Convolvulus minor, Brachycome iberidifolia, Portulacas, Saponaria, Tagetes, Alyssum, Fedia, Zinnia, Tom Thumb Nasturtiums, &c., besides many others, of which every seedsman's list affords a selection. Stocks, as a matter of course, will always be grown, as well as Chrysanthemum-flowered Asters which have bright and distinct colours for beds, with the advantage of having erect flowers. Climbing annuals, as Tropæolum aduncum (Canary Creeper), Convolvulus major, Loasa, Cobæa scandens, Eccremocarpus, Maurandyas, Lophospermums, &c., should be sown in pots, three or four seeds in each, and when strong enough should be planted to cover trellises, rusticwork, poles, walls, &c. Some of these require sowing early as formerly directed, in order to become sufficiently established, while the more hardy and strong-growing kinds will succeed now. Do not forget to make one or two sowings of Sweet Peas to keep up a succession of bloom. As the planting-out season approaches take every opportunity of hardening off the entire stock, that the change to complete exposure may be gradual, and the after-growth progressive. Any plants which are kept in pots, and which appear potbound, should either be turned out into a frame, or be watered with liquid

manure, as once in a stunted state there will be difficulty in again inducing them to break freely.

GREENHOUSE AND CONSERVATORY.

Bring forward the stock of plants recommended for blooming in July and August, by shifting such as require it, and allowing them more room. Kalosanthe will require neatly tying out, as they form beautiful globular-shaped plants by a little management. Fuchsias will require a second shift, which should now be into their blooming-pots, using rich soil for the purpose. The same will suit Scarlet Geraniums growing for specimens. These three plants can be well managed together. Erythrina Crista-galli is another free-flowering plant well adapted for the purpose, and the different varieties of Nerium, which are seldom seen, but beautiful plants. To grow these in perfection stout bushy plants should be selected, which, after being potted in peat and loam, should be placed close to the glass in a pit; let them have a good heat throughout the summer, and keep them moist at the roots while growing. About August they should be kept drier, and have the glass taken off every fine day or be placed at the foot of a south wall; by these means the shoots will become well ripened by the winter. Any dry airy house will suit them, and the following spring they may be forced into bloom with a little extra heat. If left in a house with a moderate greenhouse temperature they will not bloom before July and August. Keep the conservatory as cool by day as is consistent with the health of the inmates, this will enable the plants to continue longer in bloom, and the house will be more enjoyable to parties inspecting them. Shading must be resorted to during this bright weather, and some pains must be taken to supply the waste of moisture by the dry external air. Any delicate plants full of roots which it is not desirable to shift at present, should have their pot inserted in one a size larger, filling the interval between the pots with moss or sawdust. This, if more generally practised, would save many a valuable plant; the action of dry air on so porous a substance as a common garden pot soon extracts the moisture from the mass of earth inside, and however carefully attended to many plants die from this cause alone in hot weather.

STOVE.

Orchids are now progressing fast, and will require attention in shading daily and gradually increasing the humidity of the house, so as to keep pace with the increase of solar light and heat. If the roof is covered with climbers a little management in training them to effect a judicious shading of the plants beneath will save much trouble with the canvas outside, as it will only be needed on very bright days, and add much to the appearance of the house. See that the plants on blocks or suspended in baskets are not allowed to become dry, which would have the effect of causing a check to the young growth, which should be encouraged as long as possible. Plants in bloom should be removed to a house with a drier temperature to prolong their period of flowering.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

EXCEPT in pricking-out Cabbages, Cauliflowers, Lettuces, &c., the work has merely been a repetition of that detailed in the notices of former weeks.

Our forced *Asparagus* is over, and once before the last frost, and now since the mild change and the rain of the 15th, we have had small gatherings out of doors. At this early period, when there is a likelihood of frost, we frequently place small pots (48-sized) over the shoots that peep through the soil. The hole in the reversed pot gives a considerable amount of light, and if the day is bright the sides of the pot act as a warming pan. When room and conveniences are limited, many of these little schemes must be resorted to. We have of late grown Asparagus in rows. We are half inclined in future to go back to the bed system, say beds from 3½ to 4 feet in width, with from 2 to 2½-feet alleys, or sunk pathways, between them; not because we think the Asparagus does better, or yields better in beds than in rows on a level piece of ground, but in these late dry summers, with a scarcity of water, we cannot help having vivid recollections of the splendid Cauliflowers we used to have in the trenches, when slightly shaded by the Asparagus on each side. It is not easy to secure all advantages.

We may here make a few remarks for the inexperienced who contemplate having an Asparagus bed.

1st, Do not be deterred by any represented difficulty, and the wonderful expense incurred by digging down masses of manure 2 or 3 feet beneath the surface, and the necessity of having many substances to mix besides. The Asparagus does not root so very deeply, and would be more benefited by decomposed manure as a mulching, than by sinking that manure in the ground out of the plants' reach. Any ground moderately rich, and without so much clay as to make it a very stiff loam—ground, in fact, that would produce good Cabbages and Potatoes—ground where, owing to natural or artificial drainage, there is a freedom from stagnant moisture, will grow good Asparagus. Where the ground is very stiff it should be lightened by burnt clay, lime, sand, &c.; and in such a case, though we would stir the soil rather deeply, we would plant shallow and use light mulching every year.

2ndly, The best of all times to plant is when the young plants are from 2 to 3 inches above the ground, and then, if to be had, two-year-old plants should be used, though we often employ plants one year old. These plants will thrive much better than the roots planted before they begin to grow.

Two conditions, however, are essential to success. The plants should be carefully taken up without breaking the roots, and, again, the fine fresh fibres of the roots should never be dried by exposure to sun and air. In planting, the roots should be kept in a box or basket, covered, and damped, and as the roots are spread out they should be damped with a fine rose before being covered with earth. When thus planted, a mulching of manure after planting, a mulching on the surface every year, and just the slight whitening of the ground in spring with salt, will do more to secure good Asparagus than trenching a yard deep and burying tons of manure at the bottom. It is seldom we have been able to do so, but we have had evidence enough to prove it, that the best way to manure Asparagus is to mulch it when it begins to grow freely, after gathering has ceased. A scattering of salt will then prove beneficial, and, provided the water passes freely, too much manure water not overstrong cannot be given. What we wish to impress on our many readers who may be intending to plant an Asparagus bed this season, is that good and numerous shoots of Asparagus in April and May, and until Peas come in, are but little dependant on winter manuring, but chiefly on the help and manure afforded in summer. Such plants as those alluded to will yield moderate gatherings in two years. We have had fair Asparagus in three or four years from the seed, sown where it was to remain. In the case of a bed it should be sown thinly in rows a foot apart, the plants thinned a little the first year, and in the second to from 6 to 12 inches apart. Seed would be the easiest for many, but then they must wait longer.

Red-leading Seeds, Trapping Mice, &c.—We are much interested in what Mr. Abbey says as to the failure of red lead with him. As yet we have only had one instance here, and that was where Peas were sown under cover. Nowhere else has anything touched the seeds that were leaded. No doubt, as Mr. Abbey says, the cat is an invaluable friend to the gardener under such circumstances, but then with many of us, unless learned to run with collar and wire, it would be impossible to keep cats, as, no sooner does the kitten become large enough to be a regular monser, than the poor thing is missed and seen no more. There is something very singular, too, as respects trapping. Of all traps none with us equals the figure-4 trap with a good weight over it. One most destructive pest, the large grass mouse, we have often found to be above any sort of bait. This year it has been caught in great numbers with a bit of bread on the end of the stick, as well as the short-tailed and other mice. Lately from twelve to fifteen in a night, including sparrows in the evenings and mornings, have been of common occurrence, and still they seem to come, but, with the one exception alluded to, not a pea or bean has yet been touched in the ground. We never caught these large grass mice with such a simple bait as bread before, and very likely our success will only be for a time. We used to let these traps remain unset during the day, but lately the mice seem to go to the bait freely in daylight. Sparrows are generally caught after five at night and before eight o'clock in the morning. Even from very different results and experiences we may derive some general advantage.

FRUIT GARDEN.

We shall leave the laurel twigs on the Apricots and Peaches a little longer. The first have set very well, but a keen frost might easily injure them, as this year we have no coping, sheeting, nor netting. A broad removable coping is an excellent protection, and so is any sort of covering that will keep the blossom dry when the weather is wet and cold. Plums and Cherries out of doors are now (April 15th) in full bloom, and

such a warm rain as we have had will not injure them. Pears are not yet in bloom, though generally much more forward than Apples. Here it is worth remarking that the Apple will flourish in the smoke of London and other towns, where the Pear and the Cherry would fail. When gardening in London we used to be annoyed that nice bush Pear trees which bloomed well gave but paltry results in the way of fruit, whilst Apples fruited very fairly, and that we learned to attribute to their blooms opening later when the atmosphere was clearer and more free from soot and smoke. In dull foggy days the pollen boxes of the Pear became clogged with soot, and could not act. We have been told that there are still many fertile Apple trees in the most confined parts of London.

Deficiency of Strawberry Bloom Buds out of doors.—We lately alluded to those in pots, and on the whole, notwithstanding the dry summer and shortness of water, we have never had them showing better, there being very few misses. All those in pots had, however, received more or less protection from the severity of the frost in winter. We fear, however, that our out-door crop of Strawberries will not be an average one. Our stiffish loam just suits Strawberries, and the crops heretofore have been uniformly good, going off sometimes sooner than we liked, as they did last year from want of moisture. Many of our plants, especially those turned out of pots after fruiting under glass and giving us some gatherings in the autumn, are now coming strong and looking very fairly, but on closely examining them, there is a great deficiency of flower trusses, which ought now to be seen peeping. Those turned out later are rather better. Plants which have been a second year in the ground are likewise deficient in this respect. In the autumn we had more stocky plants in small 60-sized pots than we felt disposed to put in fruiting pots, and these we planted out in good soil at about 9 inches apart, intending to take them up with balls, and force them late if wanted, as a few lights in a frame or pit when thus filled are useful before the out-of-door plants bear. These young plants so treated generally show very strong bloom buds for the size of the plants. Many now look as if they would show well, but a goodly number are likely to produce nothing but leaves. Of similar-sized plants of different kinds potted, watered as well as we could in summer and autumn, and partly protected in winter, very few—scarcely two in a hundred—have failed in showing bold strong flower trusses, the most forward ripening well, those in bloom showing fine strong fruitstalks, and those not started showing broad trusses. We are thus particular because we would wish those similarly circumstanced to state the results of their experience, and to examine the appearance of their Strawberry plants. We hope we shall have a fair supply out of doors, but already we can see that it will not come up, so far as bloom and fruit are concerned, to our usual free-blooming and our heavy crops.

We had some forebodings last autumn that this might be the case, and it would be of little use mentioning all these details if we did not hope that our brother observers would help us to find a solution of the cause of the comparative shortness of bloom buds. Now, first, such comparative scarcity of bloom buds, when contrasted with previous years, is not at all owing to continuing a succession of barren plants, as we believed to be unfortunately the case with some of our readers last year, who had beautiful plants, but not a bloom, as the best and strongest of our plants were turned out of pots last season after they had produced fruit. The few plants potted, and which do not show flower trusses, are at once sent to enrich the rubbish heap. These fine plants, which do not show just as we would like them to do, are, therefore, the plants that fruited last year, and similar to those which, in all previous years, afterwards produced fine crops in the first season out of doors. Plants taken from those inclined to be barren of fruit and flowers are not, therefore, the cause of the diminished number of flower trusses.

Last autumn, when we had some foreboding that we might have a small crop of Strawberries out of doors this season, we based that foreboding on the dryness to which the plants had been subjected, and our inability to water them, which helped to starve instead of mature the incipient fruit buds. This idea, however, would have been more conclusive but for the simple fact that though the Strawberry plants in 1870 in the open ground did suffer from drought, they did not suffer nearly so much as in 1869, when whole quarters and beds seemed like so much dry tinder before the autumn rains came, and still from these mummies of 1869 there was a fair show of bloom, though not extra strong in 1870.

This fact, taken in connection with that already alluded to, that young plants turned out of small pots into the open ground last season do not show so uniformly and strongly for bloom as similar plants potted and receiving less or more protection in winter, lead us to the conclusion that the dryness of the summer and the keen frost of the winter united, destroyed in many cases the incipient fruit bud, though doing but little injury to the mere leafy part of the plant. We might mention some other corroborative circumstances; at present our opinion is, that if we should have a crop of Strawberries at all short, it will be chiefly owing to the dryness of the summer and the coldness of the winter, and that more moisture in the one case, or more protection in the other, might have mitigated or obviated the evil. Even the snow, which protected for a time, made the plants, like the Cabbages and Broccoli, more susceptible to the keen frost when fully exposed afterwards.

For general details as to thinning the shoots of Peaches, thinning Grapes, proportioning vapour to heat in houses, and making the best use of sun heat when obtainable, see previous numbers.

ORNAMENTAL DEPARTMENT.

We proceeded with groundwork, and rolling lawns and the sides of walks preparatory to edging them. Edging with an iron once a-year makes clipping afterwards more easy. About 1 inch, or from that to 1½ inch, is quite high enough above the walk for a verge. Nothing looks worse than a deep edge, and all the more if the raw earth is at all seen. A walk conjuring up the idea of a ditch, or of a mere watercourse, is an abomination. Walks much above the general level are equally an eyesore. We can bring to our mind's eye a broad walk in a public garden, so rounded and high in the centre, that everyone who traversed it might well keep saying to himself, "High leg, low leg."

Proceeded with potting, training, cutting-making, and hardening off bedding plants, and putting out into earth pits and trenches lots of Calceolarias, Pelargoniums, Ageratums, &c., so as to find room for Coleus, Iresines, &c., which require more heat to bring them on. It is no easy matter to find room for such numbers of plants now, when, from every place being filled, it could not be easily found out where they all could come from a few months hence.

Pricked off Lobelias, and we shall try and give them a little heat to render them strong for planting out. We also pricked off lots of seedlings of the Golden Pyrethrum, and set them in the orchard house, ere long to go out of doors. We have a lot of old plants that stood the winter which we may be induced to tear to pieces and plant if we are forced to do so; but treat these old plants as you may, they will never have the neatness and compactness of small seedlings pricked off now. Shallow wooden boxes are excellent for all such purposes. If made rough and open they need no drainage, and a dash with a quicklime brush prevents all fungus appearing.—R. F.

TO CORRESPONDENTS.

SEEDLING CINERARIA (*A. M.*).—The colour, dark blue, is intense, the truss good, and the pips well-shaped. As you say the plant is of good habit, it is altogether a superior variety.

PARASITE ON ACACIA (*H. Balderray*).—It is the common Dodder, Cuscuta europæa, and was probably brought into your greenhouse with the soil.

CAMELLIA SPORT (*P. L.*).—It is not unusual for red flowers to be produced occasionally on a white Camellia. They are all cross-breds, and, as in all cross-breds, will sometimes exhibit evidence of some distant ancestry.

PLANTS FOR WINDOW BOXES (*A. B.*).—There are many ways of doing this; some like to sow seed rather than purchase plants. We give a few simple arrangements of both. *From seeds:* 1, Mignonette all round at about an inch from the edge, and trained so as to hang down the sides, Ten-week Stocks in the centre. 2, Sweet Alyssum for an edging all round, and Saponaria calabrica in the centre. 3, Calandrinia umbellata for the margin, and Leptosiphon androsaceus albus in the centre. *Of plants:* 1, Cerastium tomentosum all round, Lobelia speciosa at each corner and midway in the side lines of Cerastium, filling up the centre with Scarlet Geraniums. 2, Variegated Alyssum all round, the end and central plants of the internal line being Ageratum Imperial Dwarf, filled in with Zonal Geranium Black Band. 3, Lobelia speciosa all round, the ends and central plants of the middle line being Centaurea ragusina, filled up with Golden Tricolor Geranium Mrs. Pollock. These will suggest other modes of arrangement.

GARDEN FOR PROFIT (*W. H. C.*).—Your garden, 80 feet by 44 feet, containing as it does about 391 square yards, would not be more than one-twelfth part of the work for a man, and could only be made to employ a gardener by covering it with glass. It might pay if you were to construct a vinery on the ground, and besides Grapes have in the house bedding plants, which could be wintered without detriment to the Vines. The Grapes would no doubt meet with a ready sale from August, and the plants in May. As to growing vegetables to sell wholesale, it would no doubt pay as far as it went, but would not employ a man more than an

hour a-day or a month a-year. Were the garden 80 yards by 44 yards instead of feet, a gardener could well attend to it and a vinery 100 feet long by 20 feet wide.

Violets (*Viola*).—No. 1 is of a very good size for its kind, and Violets are smaller than usual this season. It is Queen of Violets No. 2 is very unlike The Czar; we think it is single Russian, but cannot say positively without leaves.

Lily of the Valley not Flowering (*A Constant Reader*).—There must be something radically wrong in your treatment. It cannot be the fault of the roots, as each sends up a flower-stem, but does not grow more than an inch. We take up ours as you do, preserving a good root to each, and do not put in any but those which from their stoutness are likely to flower. The thin sharp-pointed crowns are rejected. We place them in pans about 4 inches deep, so as to have the point level with the surface, give good drainage, and use fibrous loam alone. If the soil is moist they are not watered, but, if not, they are gently watered; they are then placed in a house with a temperature of from 50° to 55° at night. They are kept moist; when they are growing freely they are well watered, and they are then placed in a light and airy position. When the lowest flowers on the spikes expand the pans are removed to a house with a temperature of from 45° to 50° at night, which hardens the plants and renders them better able to endure the cold and dry atmosphere of rooms. This is our practice after January; but before that time we place the crowns in a Mushroom house in the dark until the flower-spikes are about 4 inches long, and then remove them to a light position in a house with a temperature of 55° at night. Before January it is well to place them for a fortnight or three weeks in a house with a temperature of between 40° and 45°, as when placed directly in a house at 55° they do not always grow. We have had them placed in a forcing house in November, and have found that they do not move at all—we have known them remain dormant until May. We had some this year so treated; though placed in a temperature of 50° to 55° at night, they are now no further forward than when they were first put in, and we shall keep them where they are to see when they will start. If they were placed in a cooler house for about a fortnight they would start freely enough, but we want to know what is the cause of their not starting. Others like them flowered long ago. We require twelve 13-inch pans every week to meet the demand for this flower.

Tulips (*Idem*).—After they attain a full size, as they do in the course of the third or fourth season, they have reached the maximum of growth, and do not further increase in size, but they vary considerably in size under different conditions of soil and seasons. The age of a Tulip bulb is one year. It may be on record by a Dutch grower that one is three hundred years old, and so it might be of Wheat or any other kind of seed that perishes with the new plant. The bulbs of Tulips do not become smaller every year, except under impoverishing treatment. They keep good for very many years, but not when subjected to forcing; then they dwindle.

Shrubs—Have they Flowered? (*F. G.*).—Eurya latifolia variegata has beautiful foliage. We are not aware that it has flowered in this country, but we do not think it worth cultivating for its flowers. Kadsura japonica has rather pretty white flowers in June, but is not remarkable. Viburnum Sieboldi we know nothing of, nor of Maximowiczia amurensis. Osmanthus illicifelius is a fine evergreen shrub. We do not know if it has flowered. Having chiefly been tried in sheltered positions their hardiness is not fully established.

Camellias in Cold Pits (*Idem*).—They may be grown and flowered in cold pits and frames without heat, but the flowers are subject to spot and injury from frost. They should be protected in severe weather, and kept in the dark until danger from scalding is past—that is, until the plants and soil are thoroughly thawed. The pots should be plunged to the rim. Magnolia grandiflora will flower in large pots or tubs, plenty of head and side space being afforded, but it succeeds so well out of doors that placing it in a house is occupying space that might be better devoted to more tender subjects. No variety of Arbutus is propagated by cuttings.

Camellia Cuttings (*Wellington Road*).—The Camellia is not difficult of propagation by cuttings, but the growth of the plants on their own roots is not very satisfactory, and the flowering is generally very indifferent. The single varieties are mostly propagated by cuttings, and employed as stocks. The best time to put in the cuttings is when the wood of the current year becomes very nearly ripe, or at the end of June or beginning of July. The cuttings should be from 4 to 6 inches long; cut transversely just below the lowest bud, take off the lowest pair of leaves, and insert the cuttings up to the next pair of leaves in sandy loam, making firm. Place them in a cold pit or frame, keeping them close, just moist, and shaded from strong sun. In about three months they will be well rooted, and may be potted off singly in sandy loam, and be replaced in the frames, where they may remain throughout the winter with protection in severe weather, or they may be housed before severe weather sets in.

Bottle-brush Plant Propagation (*Idem*).—There is more than one species of Beaufortia, so called, but that known to gardeners as B. splendens is the one to which the name is generally applied. They are increased by cuttings of the half-ripened shoots, and those of our plants are now in that condition. Take off the points of the moderately vigorous shoots with their bases firm, and about 3 inches long. Neatly trim off the leaves about halfway up, and insert the cutting to that depth in sand, cover with a bell-glass, and set it in a house where there is a moderate temperature—say 50° at night, and without bottom heat. They will strike in about six weeks, and should then be hardened off. Keep them moist but not very wet, and shaded from bright sun.

Ventilation (*R. T. O.*).—The simplest mode of ventilating the lantern of the span-roofed house would be by rod and crank on each side—that is, if the house faces east and west. In a lean-to propagating pit the air should be given at the top and also at the sides. The quantity of air is as you manage it. For a small house like yours, we should be satisfied with an opening below the plate at the back wall, 15 inches long by 6 inches deep at every 4 feet, and in front 4-inch openings the size of a brick would be sufficient. In a Cucumber pit, now a mass of fruit, there is no more front air than a space 4½ inches by 2½ inches at every 4 feet, and that has never been given this season yet, as the wooden plug that fills the hole has merely been eased a little, so as just to let a little air in. There need be no infringement on a patent for opening all your ventilators less or more at once. There is no better cement for iron pipes than rough tow packing and red lead. We would use iron fillngs close to the boiler. A saddle boiler 20 inches by 20, and 17 inches in height, will suit you.

Peach Trees in Pots Failing (*Merlin*).—It is not easy to tell why the Peach trees in pots that looked so well in autumn, and grow well in your orchard house now, have, with the exception of one, a Barrington Peach, shown no bloom, or why that one has cast its bloom without setting. Did you purchase these trees established in pots? If not, and you potted them late, that would be a minor cause of failure, as all fruiting plants in pots require to be well established in these before fruiting. Another cause might be the too great kindness you have given them. A lower temperature during the day, and perhaps less water after the buds began to swell, might have saved the fruit buds. Some time ago we saw plants in pots rendered barren from an opposite cause—namely, keeping the roots too dry in winter, and the finest buds dropped before they swelled much, whilst the wood buds grew very well. In another case the fruit buds shrivelled up from giving the trees too strong a dose of Gishurst. The one tree that opened its blossoms so well, and then dropped them all, might do so owing to late potting, too much or too little water, or too much sun. In such pots, when at all late potted, it is advisable to thin out freely all the weaker blooms for the first season. Afterwards they will generally take care of themselves. We once had a good crop of Cherries in May and June from plants brought in a mat package in March, but they were potted firmly in rather small pots for their roots, and then the pots were plunged over their rims in a mild hotbed out of doors, whilst the tops were shaded and syringed in sunny days, and kept cool by free exposure to air. In three weeks there was no heat in the bed, but the roots had made fine fresh rootlets close to the sides of the pots, and then the plants were removed to the orchard house. Without thus insuring early rooting we should have expected these plants to drop most of their blooms. Without such care they ought to have been potted in the previous spring or summer. Though we cannot clearly see the cause of failure, yet we do not think you can justly complain to the nurseryman, who, by your own description of the trees, seemed to have given you good samples, and all the more as the trees obtained at the same time, and planted against walls, have, notwithstanding the frost and easterly winds, retained many blossoms. In such a case, soon after planting, we should not have been surprised at a portion of the bloom dropping; but this simple fact of the trees doing so well out of doors would be a telling argument in favour of the tradesman, and also tend to show that there was some cause, very likely mistaken kindness, that contributed to the failure in-doors.

Fruiting Shoots on Peach Trees (*Idem*).—It is quite true that, on the common principle of fan training, it is the shoot made and ripened last year that yields blossom and fruit this season. This holds good even when the nipping-in or spur system, as in pot cultnre, is resorted to; it is the nipped-back part of this year's shoots that will be a nest of buds next year. You have shown the outline of your fan-trained tree; well, each of these shoots on your tree, if all of last season's growth, will now be bristling with young shoots. Allow the shoot that comes nearest the end to grow, in order to help to fill your wall. If that should be overstrong, nip out the point when 3 inches long, and thus you may have three shoots to fill the wall instead of one. Of all the other shoots coming on last year's wood, first remove with a sharp knife the foreright shoots—that is, those on the front outside of the last year's shoot, and leave just as many on the sides as you will find room for, but remeving these extra shoots not all at once, but by degrees. A very simple plan of fan-training the Peach is to have the requisite number of leaders to fill the wall, then to have bearing shoots between, and in disbudding now, to leave only one good young shoot at the base of each bearing shoot, which will be the bearing shoot next year, when the one that has borne this season is cut away. We can confidently recommend Mr. Bréhaut's little work to you, which you can have from our office post free for 3*s.* 8*d.*

Vine Tendrils (*Idem*).—What you enclose are Vine tendrils, a provision which enables a healthy Vine to become a climbing plant. They are not in any way the rudiments of the future bunch of Grapes. The rudiments of the bunch of Grapes will be found peeping near the front of the young fruitful shoots by the time they are 2 or 3 inches long. We hope you have noticed them before now, as they can be seen before tendrils. When wood is not well ripened, or the roots are too deep, even the incipient bunches will sometimes run off into something like a tendril. We are sorry that these little matters have escaped us, but of this you may be quite certain, that we shall duly attend to inquiries when we know what is wanted, and if we cannot give a decisive answer, we will acknowledge our inability to do so. From what is stated above you would see that the fruit of Peaches this year is borne on young wood made and matured last year; on the other hand, the fruit of Vines is produced on the young shoots of this year's growth, coming from the well-ripened buds or wood of last year's growth.

Vines Bleeding (*Idem*).—That to which you allude and Thomson's styptic are the best for arresting this flow of the sap. The great preventive is early pruning. There will be little or no bleeding without a fresh-cut outlet. Sometimes when the roots are kept warm there will be more disposition to this flow of the sap. In such a case, where there is the least doubt, it is well to prune early, as soon as the leaves change, and then daub each cut with white-lead paint as thick as it will work with a small brush. Sometimes, when from late pruning the Vines showed signs of bleeding, we have deferred pruning until the shoots were 3 or 4 inches long. We have always entertained the idea that such bleeding weakened the Vine and wasted its resources. Such an opinion, however, is hardly corroborated by experiment, for when Vines in pots were left on purpose we saw but little difference in the results in the case of Vines that bled considerably and those that, from pruning early, showed no signs of such bleeding. However, it is best to avoid it, and early pruning and daubing the cut ends with thick paint are about the simplest preventives if you cannot obtain the styptic. As soon as the sheets take the running there will be no chance of bleeding.

Cucumbers in Greenhouse (*Idem*).—You could not have a better place for Cucumber-growing than the greenhouse alluded to, when the bedding plants are removed in May. The large boxes or pots will do admirably, but in planting we would not fill the boxes more than three-fourths full. That will always be sinking; but our object would be to add an inch or two of rich compost to the surface every two or three weeks—in fact, as the fine white roots spread over the surface, just add a little more. The Cucumbers should be trained to a wire or string trellis, not less than 16 inches from the front glass, and as far from the glass of the roof. To

obtain good Cucumbers it is not necessary to resort to any mode of impregnation. To make sure of seed it is desirable to resort to it; and all that is necessary is to take a male flower that has dusty pollen on its anther boxes, remove the petals of the flower, and put the pollen boxes in the centre of the female flower when fully expanded. To make sure you must do it more than once if not experienced, so as to see that anther and pistil are ripe. This is not at all required for getting fine shapely Cucumbers. If you and your friends use this Cucumber house for smoking in during the summer evenings, it will be advisable to have the foliage dry before there is much smoking.

Vine Leaves Flagging (*T. Barrett*).—We can assign no reason for your Vines flagging and the leaves dying, unless they have been frosted during the late severe weather, or rats or mice have nibbled the roots and stem. One of our best Vines never broke this season. We have no doubt that the stem and roots have been nibbled through. This is, however, less likely to be the case with your Vines planted inside.

Bowood Muscat Grapes Imperfectly Developed (*T. H. D.*).—We think it is owing to immature wood, the result of a deficiency of heat, or an inadequate supply of water. Severe attacks of red spider will also occasion a defective formation of the buds. We advise you this season to give the Vines abundant waterings, plenty of heat, and an abundance of air to thoroughly ripen the wood, and this secured, we think the bunches will develope perfectly another season. We do not think Black Hamburgh a suitable stock for either the Bowood Muscat or Muscat of Alexandria. It suits the Black Muscat of Alexandria, which, as compared to the former two, is a moderate grower. With us the White Muscats just named are very vigorous on their own roots, and succeed well in a moderately-heated house. The Madresfield Court Muscat is a splendid Grape, finer in bunch than Mrs. Pince, but we are not prepared to say that it is preferable to that variety. Both ought to be in every heated vinery.—G. A.

Inarching Vines (*J. D.*).—Royal Ascot would do well on Black Hamburgh, and the same stock would suit the Golden Champion. For Madresfield Court Muscat, the Syrian and Gros Guillsume, or Barbarossa, would answer well. You may inarch them at any time after growth commences, or when there are leaves to elaborate the sap, and so prevent bleeding, and we should perform the operation as soon as the wood of the scion becomes sufficiently long and firm to bear cutting without danger of breaking. The younger the wood the greater will be the success, and the more speedy the union. On old wood the scion does not take kindly.

Iris reticulata not Flowering (*G. S.*).—We think the cause of the non-flowering this year is due to the exhaustion of the plant by the previous year's flowering and the dryness during summer. It would be much the best plan to plunge the pots out of doors in summer, and remove them to a cool house before severe weather sets in.

Neapolitan Violets to Bloom in November (*W. H.*).—Divide the old plants, and plant the well-rooted runners early in May on an east border, in good rich soil, well dug, and liberally dressed with leaf soil or well-decayed manure. Plant in lines a foot apart, and 9 inches from plant to plant in the row, shading for a few days if the weather is bright, and watering freely if necessary. Keep the soil stirred, not going so deep as to disturb the roots, and give copious supplies of water in dry weather, and as many sprinklings overhead as you can with soot water, mixing one peck of soot in thirty gallons of water. In September take them up with good balls, plant them in a frame or pit in a warm situation, and enjoying the full sun, and shade for a few days. Keep down the lights in fine, mild weather, drawing them on only in severe periods and in very wet weather, but at such times, though shielding the plants from excessive rains, admit abundance of air. The Neapolitan is not a good Violet for early winter blooming, but is fine for spring, and is the sweetest of all. The Czar and the single and double Russian are the best for winter.

Common Brake Fern Planting under Trees (*C. L.*).—We know of no plan so good as removing the top 6 inches of the spot where they grow plentifully but not very strongly, and in that you will secure enough roots for a good growth. If taken from where they grow strongly, the rhizomes cannot be removed without going a considerable depth, and, as a rule, they do not grow well.

Border for Greenhouse Climbers (*J. D.*).—The border should be the width of the front stage—*i. e.*, 3 feet, and continued the length of the house. It should be brought level with the floor line, or not more than 3 to 6 inches above. The climbers are best planted out, and the border should be wholly inside the house. The border is intended to be under the front shelf, and the width of the shelf, whatever that may be. Outside borders are of no use, except for those kinds which are required to cover a large space; besides, they are only suited for the hardier subjects, as Fuchsias, Wistarias, and Clematises.

Pelargonium Leaf Spotted (*C. B. M.*).—The leaf is spotted in consequence of the imperfect elaboration of the sap, arising, we think, from more being taken up than can be elaborated by the leaves. The soil is too rich, though if you were to give the plants a little more heat, light, and an abundance of air, it is likely they would become healthy and flower well. The soil and atmosphere we think too dry.

Peas Mildewed (*A. Z. F. C.*).—All our Peas sown after the middle of May are sown in trenches prepared as for Celery, with this difference, that they have the soil returned level. We take out a trench 18 inches or 2 feet wide, and a good spade deep, and put in about 4 inches of manure, dig it in, then fill up with soil, give another coat of manure, and dig it in. We then sow the Peas in a wide drill, more like one made for Potatoes than in ordinary practice with Peas. When the Peas show flower, if the weather is dry, we give a good soaking with water, mulch the ground on both sides of the rows to the distance of 18 inches or 2 feet, and repeat the waterings twice a-week, giving a good soaking. A slight earthing-up does good. To have good late Peas it is necessary to water freely, and mulch so as to lessen evaporation. Dryness at the root is the principal cause of mildew in Peas. Give them plenty of moisture, and treat them liberally with manure, either liquid or solid, and it will disappear.

Fernery Construction (*Flora*).—The principal object to be kept in view is nature; but do as you may, no imitation doorways can be made to appear otherwise than as works of art, and rustic art may advantageously be employed in buildings of this character; yet it seems strange to have a doorway of bark or wood put together in rustic style, and have the roof of smooth timber showing mechanical skill. It is not the exterior of such places that we have to consider so much as the interior, and we consider it should form one scene. If it be rock, rock should everywhere prevail, and that rock should be of one description. We give all credit for the endeavour to bring together as great a diversity of materials and characteristics as possible in a small space, but that very diversity is fatal to the natural effect, for there is no geological connection between the materials employed; and it is not an imitation of nature, for there is no such thing as a confusion or mixture of many substances in the same spot. We therefore would not employ a great variety of materials for the construction of a rockery for Ferns. The very best imitations of natural rocks are, however well executed, very ill adapted to the growth of the plants, which is in our estimation the sole object of the structure. The best material for a rockery for Ferns is free grit or sandstone, we prefer the former; and no other material would we employ but limestone, some of the petrified forms of which are very suitable. The free grit or sandstone admits of two forms of arrangement—the massive and boulder. In extensive arrangements the former is the better, though it may be practised on a small scale, but small rockeries are more consistent on the boulder principle. Either of the arrangements will answer for limestone, but if the stone has been rent it must be put together as a mass, and not on the boulder system, which is that of large or small stones which have for ages been rent from the parent rock. In your case we would have the massive as well as the boulder system. The steep parts we would have in the massive style, and the lower parts formed of boulders so disposed as if they had fallen from a height, or fallen from the massive part near. Of course you will so construct the rockwork that a number of openings will be left for plants, such as ledges, clefts, crevices, and hollows, the boulders of course forming their own openings, likewise have sloping parts for soil for plants. In no case need every part of the wall be covered with rock, though some are at great pains to hide them. It will be enough if they are of stone of a kind that will moss, and we would employ stones from a building, if we could obtain them, rather than stone newly quarried. The upright wall showing in parts, with projecting rocks here and there, and fallen boulders in other parts, will give a great diversity. In constructing the walls we would not remove or strike off the mortar, but leave it as it is pressed out at the joints. This upright part will in time be covered with seedling Ferns and Moss, and will have an excellent effect, or it may be covered with Ficus repens. We would, however, syringe it well, and when wet dash against it finely sifted peat, which will cling to the wall, and rest on the lime projecting from the joints sufficiently for the speedy growth of moss and the spores of Ferns. The entrance should be concealed as much as possible. We usually have an archway, the stones laid so as to appear as if they had fallen from the two sides, and, becoming wedged, had naturally formed the arch. You may introduce water with good effect, as a dropping well or a spring from a fissure in the rock, forming a small stream, then a pool, and disappearing in a hole or fissure. It may also be brought over rock, appearing as a stream coming from high ground intercepted by falling over the perpendicular or declining rock, and forming a rill over the rock; or it may be a cascade if there is sufficient water and the rocks so disposed. The door is a matter of taste; let it be seen as little as possible from any part of the interior. We hope shortly to give more fully our views of a fernery.

Eucharis amazonica which Flower Four Times a-year.—The plants are potted in loam and a little sand, placed in a house where they have bottom heat all the year round, and are never allowed to become dry. They were potted eight years ago, and nothing has been done to them since, except top-dressing them with sandy loam, and occasionally watering with liquid manure.—*J. Sayers, Gardener to Thomas Bewley, Esq., Rockville, Blackrock.*

Mealy Bug on Stephanotis floribunda (*A. F. G.*).—The white insect on the truss of flowers is mealy bug. It is very difficult to destroy it when it has taken a hold. We have freed our stove from it by syringing the plants forcibly and repeatedly with water at a temperature of 140°, adding to every gallon twenty drops of spirits of turpentine. Fumigation with tobacco will not destroy the insect, though it may retard its progress. We cannot say how it would answer in your case, as the plant being on the roof it is probable that the hot water dripping on the plants beneath would injure the young growth if they are of kinds likely to hold water in their centres, as Draceenas. We have not experienced any injury from its application, and any tender plants it is easy to remove. It is useless trying to kill this insect by gentle sprinklings; the water must be applied with force to wash off the insects. When the plants are cleared from the mealy bug we give a good syringing with a solution of 3 ozs. of soft soap to the gallon of water, with twenty drops of spirits of turpentine, applying this at a temperature of 140°. We find, however careful we may be in excluding all plants infested with it from our houses, occasionally it finds its way into our collection on bought plants, and from quarters whence we should not expect it. We would not have a plant infested with mealy bug at a gift. In stoves and vineries nothing does so much good as forcible syringings, as above indicated.

Fungus on Juniper Bark (*W. H. M.*).—The orange-coloured jelly-like fungus is the Podisoma Juniperi-communis, and very common on the Juniper.

Name of Apple (*G. C., Croydon*).—Marmalade Pippin.

Names of Plants (*Mary*).—Saxifraga crassifolia. (*Lady King*).—Iris tuberosa, native of the south of Europe and the East. (*J. B.*).—Corydalis solida. (*A. F.*).—The Holly Fern, Polystichum Lonchitis. (*A. B. C.*).—A double Anemone, A. pavonina fl.-pl. It is well known in nurseries. (*A. C.*).—Scilla sibirica. (*A Young Gardener*).—Amelanchier Botryapium. (*W. Dawber*).—Anemone pavonina fl.-pl.

POULTRY, BEE, AND PIGEON CHRONICLE.

THE STROUD POULTRY SHOW.

Will you allow me, through your columns, to make an appeal, which I trust will be endorsed by all the influence of The Journal of Horticulture, to the managers of the Stroud Poultry Show, to alter the date of their next meeting, so as not to clash in point of time with the great gathering of the Bath, West of England, and Southern Counties Association at Guildford? The latter Society, with its great name and reputation, with various and comprehensive exhibitions, including the fine

arts, horses, live stock of all kinds, everything connected with agriculture, and a specially good collection of poultry; moreover with ramifications extending throughout the south of England, with an enormous capital raised to meet its expenses, and with a great influx of visitors attracted, even from long distances, is a most formidable rival. Now, it is clear enough that prize poultry, like everything else, cannot "be in two places at once," and the Stroud Show, which at any other time would be a great success, will doubtless suffer greatly in point of attractiveness through the absence of many of the best pens of poultry in England.

Considering the scanty number of southern shows compared with those of the north, it is doubly unfortunate that two exhibitions, both offering liberal prizes, should clash with each other in point of time. But it is not too late to convey through you to the Stroud authorities the feeling of *many* exhibitors, and to appeal to them, for the sake of the success of their show, as well as for the convenience of exhibitors, to alter the date of it.—An Old Exhibitor.

ROYAL DUBLIN SOCIETY'S POULTRY AND PIGEON SHOW.

The annual spring Show of this Society was held on the 11th inst. and following three days in the gallery of the large hall of the Association in Kildare Street, Dublin. There were nearly four hundred entries, and in some of the classes the quality of the birds was very high.

Of the Silver-Grey *Dorkings*, most of the best birds had gouty feet, but in point of feather and colour they were perfect. The Dark Greys were much better in feet, and some of the birds were good in colour. There were some good *Spanish* fowls, but many of these were not well shown, and required much better attention as to cleanliness in face and drops. The Dark *Brahmas* were a good class, most of the birds deserving notice; but those of the Light variety were very poor, being quite yellow and short of marking. The first-prize Buff *Cochins* were a fine pair of birds, and in excellent order; the second-prize birds extremely large, but in poor condition. Several other pens were well worthy of position. The Whites and Blacks were moderate, and most of the Partridge-coloured good in shape, but wanting in marking, although the first-prize cockerel was perfect in colour and marking. Of *Game*, several pens were left out on account of the trimming, which was something extraordinary, and carried out in the most unblushing manner. [We wish our reporter had stated the names.—Eds.] There were but two classes for *Hamburghs*, and, excepting the prize birds, they were poor. Of the Pencilled Hamburghs, both the winning birds were Silvers, the first taking that position only through condition, the second being more perfect, especially the cockerel, but very dirty. The Black *Polands* were very fine, as also were the Gold and Silvers. For *La Flèche*, both the prizes were won with good birds. The *Houdans*, with the exception of the first-prize birds, were very faulty in comb, and this remark applies also to the single-cock class of that variety. All the remaining classes of single cocks were well filled, and all contained excellent birds, particularly the Cochins and Brahmas. In the Variety class were *Scotch Greys*, *Malays*, and *Breda* fowls, but the latter were but of ordinary quality. Game *Bantams* were of moderate quality, but the Black in the Variety class were very good.

Among the *Pigeons* we were particularly struck with the first-prize Blue Ponters. These were exceedingly fine in shape and colour. The cock bird was 20 inches in feather, and 9¼ inches in limb. The Almond Tumblers, also shown by Mr. Zurhorst, were very good in skull, and well broken in feather. The Fantails were but moderate, but the Jacobins most exquisite, the first-prize Blacks being very small and neat in hood and chain. The Owls were poor, but the winning Barbs very good in skull and eye. In the Variety class a fine pair of Silver Runts were first.

Turkeys had two classes, and both were well represented, Mr. Cooper showing the heaviest birds, but as far as regards colour and condition, he was beaten entirely by Mr. Mowbray. There was one bird of the Crested variety. Some very large-framed *Geese* were shown. The Ronen *Ducks*, though good, showed the effects of the breeding season in defective bills, although the winners were right in that respect. The Aylesburys were a good lot. The first prize was awarded to a splendid pair of young birds, closely pressed by Mr. Cooper's pen, but his birds were not in good order.

Dorkings.—*Silver-Grey.*—1, R. P. Williams, Clontarf. 2, G. N. Purdon, Killucan. 3, Mrs. Warburton, Naas. *hc*, W. G. Mulligan, Belfast. *c*, Capt. Downman, Kingstown; S. Mowbray, Mountrath. *Any other Colour.*—1, G. A. Perrin, Loughlinstown. 2, G. A. Stephens, Dublin. 3, S. Mowbray. *hc*, Mrs. Warburton.

Spanish.—1, G. A. Perrin, Co. Dublin. 2, G. A. Stephens. 3, W. G. Mulligan, Belfast. *hc*, E. Fux, Ballsbridge; Miss de Courcy Drevar, Blackrock; J. Barlow.

Brahma Pootra.—*Dark.*—1, R. W. Boyle. 2, F. H. Green, Windsor, Belfast. *hc*, Mrs. Warburton; G. A. Stephens. *Light.*—1, Dr. J. F. Duncan, Finglas. 2, Capt. Downman.

Cochin-China.—*Buff or Cinnamon.*—1, G. A. Perrin. 2, F. H. Green. *hc*, W. H. Perrin; G. A. Perrin. *White or Black.*—1, R. P. Williams, Clontarf. 2 and *hc*, Mrs. Taaffe. *c*, G. A. Perrin. *Brown or Partridge.*—1, G. A. Stephens. 2 and *hc*, Mrs. Taaffe. *Black or Brown Red.*—1, G. A. Perrin. 2, T. Hoffield, Bray.

Game (Any other variety).—1, T. Hoffield. 2 and *hc*, G. A. Perrin.

Hamburghs.—*Pencilled.*—1, G. A. Perrin. 2, Hon. J. Massy, Limerick. *hc*, L. Stoney, M.D., Dublin; Hon. J. Massy; Miss Hennis. *Spangled.*—1, S. Mowbray. 2, G. A. Perrin. *hc*, F. H. Greene.

White-crested Black Fowl, or Black-crested White Fowl.—1 and 2, Miss de Courcy Drevar. *hc*, R. P. Williams. *c*, J. K. Millner, Blackrock.

Polands (Gold or Silver).—1, G. A. Perrin. 2, R. P. Williams. *c*, Capt. Downman.

La Flèche.—1 and 2, G. A. Stephens. *hc*, Capt. Downman.

Houdan.—1, G. A. Stephens. 2, J. C. Cooper, Limerick.

Crève-Cœur.—1, Hon. J. Massy. 2, Lieut.-Col. C. R. Chichester.

Torkeys.—1 and 3, J. C. Cooper. 2, S. Mowbray.

Geese.—1, J. C. Cooper. 2 and 3, Mrs. Warburton. *hc*, R. P. Williams; Mrs. Warburton.

Ducks.—*Rouen.*—1, W. G. Mulligan. 2, J. C. Cooper. *hc*, S. Mowbray; W. G. Mulligan; G. H. Stephens; Miss Simmonds, Loughlinstown; R. P. Williams; G. A. Perrin. *Aylesbury.*—1, S. Mowbray. 2, J. C. Cooper. *hc*, Hon. J. Massy; W. G. Mulligan; R. P. Williams; Mrs. Warburton.

Ornamental Waterfowl.—1 and 2, R. P. Williams. *hc*, Lieut.-Col. C. R. Chichester.

Selling Class.—1, J. K. Millner. 2, Mrs. Taaffe (Lemon Cochin-China). 3, Mrs. Marmion, Ashtown, Dublin (Spanish). *hc*, W. G. Mulligan (Dark Brahma Pootra); Mrs. Warburton (Silver-Grey Dorkings and Dark Brahma Pootra); Capt. Downman (Buff Cochin-China); G. A. Stephens; S. Mowbray (Dorking); J. Hyland. *c*, J. K. Millner; E. E. Seale; Lieut.-Col. Chichester; Dr. Duncan.

SINGLE COCKS.

Dorking.—1, F. H. Green. 2, G. N. Purdon. *hc*, Mrs. Warburton; R. P. Williams; S. Mowbray; Mrs. Clay; G. A. Stephens; Hon. Mrs. Greene.

Spanish.—1, R. P. Williams. 2, Hon. Mrs. Greene, Bray. *hc*, W. G. Mulligan; G. A. Stephens; Dr. J. F. Duncan. *c*, H. L. K. Harman, Ballymahon.

Cochin-China.—1, G. A. Perrin. 2, Mrs. Clay, Killiney Road. *hc*, Dr. Duncan. *c*, Mrs. Taaffe; G. A. Perrin.

Brahma Pootra.—1, Mrs. Warburton. 2, R. W. Boyle. *hc*, Mrs. Warburton; G. A. Stephens. *c*, E. A. Seale, Kilgobbin; Dr. Duncan; R. W. Boyle.

La Flèche.—1 and 2, G. A. Stephens.

Houdan.—1, G. A. Stephens. 2, Mrs. Clay. *hc*, Hon. J. Massy; J. C. Cooper; Mrs. Clay.

Crève-Cœur.—1, J. Carleton, Shankhill. 2, Hon. J. Massy.

Game.—1 and 2, G. A. Perrin. *hc*, F. H. Greene.

Game Bantams (Any variety).—1, Master Downman, Kingstown. 2, G. A. Perrin. *hc*, Mrs. Taaffe; G. A. Perrin; N. E. Wallace.

Bantams (Any other variety).—1, G. A. Stephens. 2, T. Reynolds, Co. Dublin. *hc*, T. A. Bond, Londonderry; F. Perrin.

Any other Variety.—1, S. Mowbray. 2, E. A. Seale. *hc*, Mrs. Taaffe; J. C. Cooper; J. C. Dodwell; E. Dane. *c*, E. A. Seale.

Turkeys.—1, S. Mowbray. 2, J. C. Cooper, Limerick. *hc*, Lieut.-Col. C. R. Chichester; Miss L. King.

PIGEONS.

Carriers.—1, R. W. Smith. 2, J. M'Donnell. *hc*, E. A. Seale.

Pouters.—1, F. W. Zurhorst. 2, J. K. Millner. *hc*, E. A. Seale; J. M'Donnell.

Tumblers (Any variety).—1, F. W. Zurhorst. 2 and *c*, E. A. Seale. *hc*, J. M'Donnell, Dublin; J. K. Millner.

Fantails.—1, 2, and *c*, E. A. Seale. *hc*, J. K. Millner; J. M'Donnell.

Jacobins.—1 and 2, E. A. Seale. *hc*, J. Dowling, Cork; J. M'Donnell.

Owls.—1 and 2, J. M'Donnell. *hc*, J. Dowling.

Barbs.—1 and 2, J. Dowling. *hc*, R. W. Smith, Cabir; E. A. Seale.

Turbits.—1, E. A. Seale. 2, J. Dowling. *hc*, F. W. Zurhorst; E. A. Seale; J. Dowling.

Any other Variety.—1, F. W. Zurhorst. 2, J. K. Millner. *hc*, J. M'Donnell; J. K. Millner.

The Judges were—Mr. E. Hutton, Pudsey, Yorkshire; Mr. G. Meney, Blessington; and Mr. C. C. Hamilton, Tralee.

THE POISON OF THE HONEY BEE AS A MEDICINE.—No. 1.

In the first edition of my work on the "Hive and Honey Bee," published in 1853, I said:—

"An intelligent Mandingo African informed a lady of my acquaintance, that they do not in his country dare to eat unsealed honey until it is first boiled. In some of the Southern States all unsealed honey is generally rejected. It appears to me highly probable that the noxious quality of the honey gathered from some flowers, is for the most part evaporated before it is sealed over by the bees, while the honey is thickening in the cells. Boiling the honey would of course expel it more effectually, and it is a well-ascertained fact that some persons are not able to eat even the best honey with impunity, until after it is boiled! I believe that if persons who are injured by honey, would subject it to this operation they would usually find it to exert no injurious influence on the system.

"I have met with individuals upon whom a sting produced the singular effect of causing their breath to smell like the venom of the enraged insect.

"While the poison of most snakes and many other noxious animals affects only the circulating system, and may therefore be swallowed with impunity, the poison of the bee acts powerfully, not only upon the circulating system, but upon the organs of digestion.

"An old writer recommends a powder of dried bees for distressing cases of stoppages; and some of the highest medical authorities have recently recommended a tea made by pouring boiling water upon bees for the same complaint, while the homœopathic physicians employ the poison of the bee, which they call "apis," for a great variety of maladies. That it is capable of producing intense headaches, any one who has been stung, or who has tasted the poison, very well knows."

"Bees often thrust out their sting, in a threatening manner, even when they do not make an attack; when extruded from its sheath, it exhibits a minute drop of poison on its point, the odour of which is quickly perceived, and some of it is occasionally flirted into the eye of the apiarian, causing considerable itching." Ed. 1857.

I have known for many years that many of the peculiar effects produced upon the human system by honey, were owing mainly, if not entirely, to the poison of the bee in the honey eaten. I know of no one before me who has called the attention of medical men to this important fact.

Every experienced bee-keeper knows that it is next to impossible to remove honey from a hive without exciting the bees; the least tap

upon the hive causes them to thrust out their stings, and thus to bedew the combs with their poison, so that every disturbing influence causes an effusion of more or less poison, even when the honey is not, at the time of this disturbance, taken from the hive. This poison, adhering to and drying upon the honeycomb, will, for a very considerable time, be active in its effects.* It is a well-known fact that some persons cannot eat even a very little honey without distressing colic pains; and I have repeatedly demonstrated that if the honey is boiled, or brought nearly to the boiling-point, such persons can eat it with impunity, while they cannot eat safely a small quantity of loaf sugar in which some of this bee-poison has been put. As the bee-poison+ is very volatile, slightly boiling the honey seems to dissipate it entirely.

The fact that there is almost always more or less bee poison in the honey of commerce, and that many of the peculiar symptoms caused by eating honey are attributable to this poison, opens a new source of inquiry to the medical world; and they can now use the vast stores of facts and opinions as to the medical virtues of honey, furnished by Aristotle, Hippocrates,‡ Galen, Pliny, and a host of old and medical authors.

It is obvious from these remarks, that the remarkable effects claimed by the homœopathists to be produced upon the human system by the bee poison, and which they have regarded as quite a recent discovery, may be traced back almost to the remotest antiquity, and found to have equally important relations to the old schools of medicine.

Schuckard, in his recent work on "British Bees," says: "The earliest manuscript extant, which is the medical papyrus, now in the Royal collection at Berlin, and of which Brugsch has given a fac-simile and a translation, dates from the nineteenth or twentieth Egyptian dynasty, accordingly from the reign of Ramses II., and goes back to the fourteenth century before our era. But a portion of this papyrus indicates a much higher antiquity, extending as far back as the period of the sovereigns who built the pyramids, consequently to the very earliest period of the history of the world.

"It was one of the medical treatises contained within the temple of Ptah, at Memphis, and which the Egyptian physicians were required to use in the practice of their profession, and if they neglected such use they became responsible for the death of such patients who succumbed under their treatment, it being attributed to their contravening the sacred prescriptions. This pharmacopœia enumerates amongst its many ingredients honey, wine, and milk; we have thus extremely early positive evidence of the cultivation of bees. That they had been domesticated for use in those remote times is further shown by the fact mentioned by Sir Gardiner Wilkinson, of a hive being represented upon an ancient tomb at Thebes.

"It may have been in consequence of some traditional knowledge of the ancient medical practice of the Egyptians, that Mahomet, in his Koran, prescribes honey as a medicine. One of the Suras, or chapters, of that work is entitled 'The Bee,' and in which Mahomet says:—'The Lord spake by inspiration unto the bee, saying: Provide thee houses in the mountains and in the trees [clearly signifying the cavities in the rocks and hollows of trees, wherein the bees construct their combs], and of those materials wherewith men build hives for thee; then eat of every kind of fruit, and walk in the beaten paths of thy Lord.' There proceedeth from their bellies a liquor, wherein is a medicine for men. Verily herein is a sign unto people who consider.

"It is remarkable that the bee is the only creature that Mahomet assumes the Almighty to have directly addressed. Al-Beidawi, the Arabian commentator upon the Koran, whose authority ranks very high, in notes upon passages of the preceding extracts, says, 'The houses alluded to are the combs, whose beautiful workmanship and admirable contrivance no geometrician can excel.' The 'beaten paths of thy Lord,' he says, 'are the ways through which, by God's power, the bitter flowers passing the bee's stomach, become honey; or, the methods of making honey he has taught her by instinct, or else the ready way home from the distant places to which that insect flies.' The liquor proceeding from their bellies, Al-Beidawi says, 'is the honey, the colour of which is very different, occasioned by the different plants on which the bees feed; some being white, some yellow, some red, and some black.' He appends a note to where Mahomet says, 'therein is a medicine for man,' which contains a curious anecdote. The note says, 'The same being not only good for food, but a useful remedy in several distempers.' There is a story that a man once came to Mahomet, and told him his brother was afflicted with a violent pain in his belly; upon which the prophet bade him give him some honey. The fellow took his advice; but soon after, coming again, told him that the medicine had done his brother no manner of service. Mahomet answers, 'Go and give him more honey, for God speaks truth, and thy brother's belly lies.' And the dose being repeated, the man, by God's mercy, was immediately cured."

Butler, in his "Feminine Monarchy," speaks as follows:—

"Honey is hot and dry in the second degree; it is of subtle parts, and therefore does not pierce as oil, and easily passes into the body. It has a power to cleanse, and some sharpness withal, and therefore it openeth obstructions; it cleareth the breast and lights of those humours which fall from the head to those parts; looseth the belly, and purgeth the foulness of the body, and provoketh urine; it cutteth and casteth up phlegmatic matter, and therefore sharpeneth the stomachs of them which by reason thereof have little appetite; it purgeth those things which hurt the clearness of the eyes; it nourisheth very much; it breedeth good blood; it stirreth up and preserveth natural heat, and prolongeth old age; it keepeth all things uncorrupt, which are put into it, and therefore physicians do temper therewith such medicines as they mean to keep long; yea, the bodies of the dead being embalmed with honey, have been thereby preserved from putrefaction. It is a sovereign medicament for outward and inward maladies. It helpeth the griefs of the jaws, the kernels growing within the mouth, and the squinanci or inflammation of the muscle of the inner gargil, for which purpose it is gargarised and the mouth washed with it. It is drunk against the biting of a serpent. . . . . All which premises being considered no marvel though the wise king said, 'My son eat honey, for it is good.' . . . . Yea, honey, if it be pure and fine, is so good in itself, that it must needs be good even for them whose queasy stomachs are against it."

Butler refers to Aristotle, Galen, Pliny, and a number of old writers. Having no time now to examine what all these old and modern writers have said on the virtues of honey, and to show in how many instances the effects produced by its use upon the human system must have been owing to the presence of the bee poison, a few quotations from the elder Pliny (born A.D. 23) on the virtues of honey, will be of peculiar interest. I extract from Holland's translation, published in London in 1601.

"Honeycombs given in a gruel made of formitie first parched and dried at the fire, is singular for the bloody flux and exulcation of the bowls," vol 2, page 137. "In the throat the kernels of each side thereof called the tonsils, for the squinanci (quinsy), and all the other evils befalling to the mouth, as also for the dryness of the tongue through extremity of heat in fevers, it is the most sovereign thing in the world," page 135. "Honey boiled is singular for the inflammation of the lungs and for the pleurisy; also, it cureth the wounds inflicted by the sting or teeth of serpents. . . . Honey, together with the oyle of roses, dropped into the eare, cureth their stinging and pain. . . . . being used simply alone, and not compounded with other things, it is hurtful to the eyes, and yet others give counsel to touch and anoint the corners of the eyes therewith, when they are exulcrate." "It is an excellent thing for them that be stung, *to take the very bees in drink*, for it is an approved cure." . . . "As touching divers sorts of venomous honey, I have written already; but for to repress the poison thereof, it is good to use other honey *wherein a number of bees have been forced to die;* and such honey so prepared and taken in time, is a sovereign remedy for all the accidents which may come by eating or surfeiting upon fish." Page 363. The italics are mine.

I will close by relating a conversation I had two weeks ago with Mr. Eli Whitney, of New Haven (Conn.,) son of the celebrated Eli Whitney, inventor of the cotton-gin. Knowing the interest I took in bees and honey, he told me that for years he had suffered from acute chronic catarrh, and that on one occasion he obtained relief from severe pain, his nostrils feeling almost closed. He rubbed his little finger in some honey before him, which was exuding from the comb, and applied it to the inner nostrils as an emollient or lubricator. Experiencing almost instantaneous relief, he continued to use honey freely for this purpose, until now he is almost entirely cured. Had he used boiled honey, he would probably have been but little, if any, benefited thereby; and had he used sugar syrup with bee-poison added, I presume it would have proved equally curative with the honey. The use of honey for catarrh is clearly suggested by the above extracts from Pliny and Butler.—L. L. Langstroth, *Oxford, Ohio.*

SIZE OF HIVES.

Can you inform me why Mr. Pettigrew prefers hives 16 and 18 inches by 12 inches? I think if the hives were 20 and 22 inches wide and 7 or 8 inches high they would be better.—Lancashire.

[In answer to the above inquiry, I have to say that the shape of the hives is left in the "Handy Book of Bees" to the taste of its readers. In my eyes a hive 22 inches wide by 7 or 8 inches high would be offensively disproportioned; it would look like a great Gloucester cheese in shape, whereas a hive 12 inches deep and 18 inches wide is symmetrical and pleasing. All persons who see my hives are as much astonished at their beauty as at their size. "Lancashire" thinks a shallower hive would be better. In what sense better? I have stated elsewhere that the bees in shallow hives, generally speaking, gather honey faster than in narrow deep ones; but I think 7 or 8 inches too shallow for breeding, and that the deep hives are better for the purpose. Hence I adopt and recommend hives 16 and 18 inches wide by 12 deep, inside measure; but I hope "Lancashire" will try the wide-shallow hive, be pleased with the result, and let the readers of the Journal have the benefit of his

* Those using the Hruschka or centrifugal machine for emptying honey from the combs—so named after its inventor Major Hruschka—should be careful to heat nearly to the boiling point all Hruschkaed honey, to be sure that the poison of the bee has been effectually expelled from it. This is the more necessary, as the process of removing for emptying is more likely to excite the bees than the simple removal of the honey in boxes.

+ I much prefer this good old Anglo-Saxon term to Apis mellifica, the name given to it by the homœopathists, but which is the proper scientific name of the honey bee itself. ‡ Born 460 years before Christ.

experience. Once I had a hive 24 inches wide and 7 inches deep, and kept it three years. The bees swarmed every year, and did pretty well; but ever since I have preferred hives with a greater depth of comb.—A. PETTIGREW]

AMERICAN BEE-KEEPERS' ASSOCIATION.

IN accordance with an announcement made some time previously, a meeting of bee-keepers was held at Cincinnati on the 8th of February and following two days. This movement, and a similar one held at Indianapolis in December, were to a great extent in opposition to one another, but a strenuous effort is being made to effect an amicable union among bee-keepers, so as to have but one national association of the fraternity. The two societies organised at Indianapolis and at Cincinnati are each to meet at Cleveland, Ohio, on the first Wednesday in December, and it is hoped that on that occasion union will be effected. Mr. Langstroth was elected president of the association formed at Cincinnati, and the Rev. H. A. King, of New York, secretary.

The convention extended over three days, and interesting discussions were held on a variety of topics, such as winter management, swarming, hybrids, Italian and Egyptian bees, honey plants, the mel-extractor, the benefit of salt to bees, &c. A proposal to raise a sum of 5000 dols. as a testimonial to Mr. Langstroth for his services as the pioneer of scientific bee-culture in America, was adopted, but not without eliciting some sharp contention arising chiefly out of conflicting interests in patent rights. There is a certain class of apiarians who seem to be apt imitators of the "busy bee" in stinging those who annoy them; with the exception of this ill-timed ebullition of jealousy, the convention appears to have been a pleasant and instructive one.

OUR LETTER BOX.

GREAT HARWOOD SHOW.—After reading Mr. Ashworth's letter in last week's Journal, I applied personally to the Judge who officiated at the above Show, to ascertain if my statement was correct or not. I find that the pens numbered 342, Carrier hens, and 358, Barbs, were empty at the time the awards were made, and also that both of the winning pens of Dragoons were both Yellows, though at that time one of my pens contained a pair of Blue ones, which was a colour that I did not exhibit.—H. YARDLEY.

INFLUENCE OF MALE BIRD (*Turk*).—Your suggestion is of an impossibility. You are not aware of the anatomy of a fowl.

TRIMMING SPANISH FOWLS (*Inquirer*).—Any judge who does his duty will disqualify your birds if he detects that the feathers are plucked away as you propose.

YOLE OF DUCK'S EGGS DARK (*Constant Reader*).—We do not know the cause of the eggs being dark. It happens sometimes with us that one in twenty or thirty is of that dark colour. We do not note it; we accept it as a natural occurrence, and think that the evil, if it be one, will cure itself with fine weather and plain diet.

CLAWS OF POLANDS (*J. W. J.*).—Your friend cannot be serious when he tells you Polands of any colour should have five claws. He is either jesting or he knows nothing of the subject. There are no white Dorking Polands, or white Poland Dorkings.

TAILS OF BRAHMAS (*Poussin*).—It is right that the tails of Light Brahmas, both cocks and hens, should be entirely black. It is not a serious fault if the sickles of the cock are slightly edged with silver. It is better they should be black. It is not even an advantage for the sickles to diverge laterally. You may take it as a rule that a Light Brahma should have a light body, striped hackle, and a black tail and flight.

HATCHING EGGS OF COCHIN-CHINAS (*M. Ross*).—Cochin eggs do not take longer to hatch than others, The reverberation from the firing of a small cannon would not affect the eggs. When a full-sized chicken dies in the shell it is because the egg has been kept too dry, and the chicken cannot accomplish its exit. This cannot occur if the eggs are thoroughly wetted every day for ten days before hatching. If the dead chickens were only one-third formed, it follows they lived one week and have been dead two. The egg should be putrid. They were fertile eggs, or no chicken would have formed. We believe those which have died in the eggs were chilled. It is more than probable they were on the top of the nest, and, the hen having left them too long, they died from cold. Professed henwives would tell you, you could expect no luck because your hen sat on an even number of eggs.

GROUND OATS (*G. D.*).—We prefer No. 1. It is above the average, but not so good as we have seen.

CHICKENS FROM A DOUBLE EGG (*Constant Reader, W. H. B.*).—It was long said double eggs were unproductive, but it has been proved of late they often produce two chickens. They are generally weak, but they do not always die. They are equivalent to twins in other animals. It is a barbarous work to break the shell of an entire egg to facilitate the egress of the chicken, it is also unnecessary. Where the eggs are kept well wetted they allow the chick to escape easily; where they are allowed to get hard and dry the strongest chicken suffers from its struggles.

WEIGHT OF BANTAM COCK (*Swerrab*).—A Black Red Game Bantam cock should weigh 17 or 18 ozs., the hen 12 to 14 ozs. Willow legs are the most admired, but they are not more correct than the others.

PIGEONS (*Idem*).—It is detrimental to Antwerps if their wings droop below their tails. The exuding from the oleaginous gland of the Pigeon arises from its being relaxed and out of order. Wash it with salt and water.

PIGEON WITH HEAD TURNED (*Old Bob Ridley*).—Your Pigeon has most probably the vertigo. The only chance, as it is a disease thought to be caused by high feeding, is to separate it from the rest and feed low. If it do not improve, it will be the kindest plan to wring its neck. Pulling the whole of the feathers out of the tail was a good plan, as it would tend to lower the bird. On the same principle we have known when animals have had the same disease, that farriers have put the lancet again and again into their tail, and a cure we know in one case was thus effected.

BARB PIGEONS LAYING SOFT EGGS (*M. W. W.*).—If your birds are in confinement, have you supplied them with old mortar rubbish, or any material to form egg shells? If you have not, that will be the cause. If you have, and there is no fault there, examine your birds and see if they are very fat; then, if so, give an aperient pill, and so lower the system. Perhaps you may have been feeding them too highly. In our own loft we have had this spring an unusual number of clear eggs, which we attribute to the cold of the late winter.

PORTRAITS OF PIGEONS (*Croydonia*).—The following have been published in this Journal:—Antwerp in No. 464; Carrier, No. 472; Dragoon, No. 474; Ponter, No. 483; Almond Tumbler, No. 489; Barb, No. 499; Flying Tumbler, No. 509; Fantail, No. 512; and Turbit, No. 523.

CAGE FOR BULLFINCH (*A Two-years Subscriber*).—Any ordinary Canary song cage will do for a Bullfinch. Feed on Canary, rape, and a little hemp mixed.—W. A. B.

PIP IN CANARIES (*C. A. J.*).—I am not aware of the primary cause of pip in Canaries—that is, I do not know of anything likely to induce it. It results from inflammation of the oil gland. The usual mode of treatment is to open the pustule with a fine needle, and carefully express the matter, afterwards anointing the part with fresh butter. This must be done to save the bird's life, but death usually supervenes at the next moult.—W. A. B.

BEE-KNIFE (*Amateur*).—Messrs. Neighbour or Mr. Pettit could supply you.

METEOROLOGICAL OBSERVATIONS,

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude 111 feet.

DATE. 1871. April.	9 A.M. Barometer at 32° and Sea Level.	9 A.M. Hygrometer. Dry.	9 A.M. Hygrometer. Wet.	9 A.M. Direction of Wind.	9 A.M. Temp. of Soil at 1 ft.	IN THE DAY. Shade Temperature. Max.	IN THE DAY. Shade Temperature. Min.	IN THE DAY. Radiation Temperature. In sun.	IN THE DAY. Radiation Temperature. On grass	Rain.
	Inches.	deg.	deg		deg.	deg.	deg.	deg.	deg.	In.
We. 12	29.838	52.8	52.0	S.W.	45.5	66.0	46 7	122.0	42.3	0.050
Th. 13	30.025	56.7	54.4	N.W.	47.8	64.0	47.0	110 0	48.9	—
Fri. 14	29.925	47.0	46.0	S.E.	48.3	63.0	43.2	100.8	39.0	0.120
Sat. 15	29.310	52.0	50 2	S.W.	49.0	59.2	47.0	92.6	44.2	0.070
Sun.16	29.371	53.0	50.6	W.	48.9	58.4	47.5	101.0	44.3	0.470
Mo. 17	29.388	50.0	48.4	W.	48.7	63.1	46.2	110.6	46.0	0.070
Tu. 18	29.641	62.0	49.2	S.E.	49.5	55.4	47.6	64.5	46.2	0.710
Means	29.643	51.9	50.1		48.2	61.3	46.5	100.2	43.7	1.490

REMARKS.

12th.—Very fine morning, noon, and early part of afternoon, rain at 7 P.M. but fine afterwards.

13th.—Rather dull morning, but very fine afternoon and evening.

14th.—Very fine and clear at 6 A.M., rather dull at 9 A.M., fine afternoon, dull evening.

15th.—Rain in the night and till noon, very fine afterwards though windy.

16th.—Rain in the night, very fine in early morning, showery day, fine evening. [evening.

17th.—Dull morning, showery till about 2 P.M., then fine afternoon and

18th.—Dull morning, air very heavy till noon, feeling as if there would be thunder, afterwards heavy rain all day and dark.

A week of uncertain weather, at times beautifully fine and then a sudden shower. The fall of rain very great for so short a time, but it was much wanted.—G. J. SYMONS.

COVENT GARDEN MARKET.—APRIL 19.

WE have still but a limited amount of business doing for the season, and that not at all of a high-class character, our chief customers being from the Midland markets for rough vegetables and Rhubarb, sales being effected at rather lower rates. Continental supplies are very irregular; the Potato trade heavy at former quotations.

FRUIT.

	s.	d.		s.	d.		s.	d.		s.	d.
Apples	½ sieve	1	6 to	3	0	Mulberries	lb.	0	0 to	0	0
Apricots	doz.	0	0	0	0	Nectarines	doz.	0	0	0	0
Cherries	lb.	0	0	0	0	Oranges	℔ 100	6	0	10	0
Chestnuts	bushel	10	0	18	0	Peaches	doz.	0	0	0	0
Currants	½ sieve	0	0	0	0	Pears, kitchen	doz.	2	0	6	0
Black	do.	0	0	0	0	dessert	doz.	0	0	0	0
Figs	doz.	0	0	0	0	Pine Apples	lb.	6	0	10	0
Filberts	lb.	0	0	2	0	Plums	½ sieve	0	0	0	0
Cobs	lb.	2	0	2	6	Quinces	doz.	0	0	0	0
Gooseberries	quart	1	0	1	6	Raspberries	lb.	0	0	0	0
Grapes, Hothouse	lb.	10	0	20	0	Strawberries	oz.	0	9	1	3
Lemons	℔ 100	6	0	10	0	Walnuts	bushel	10	0	18	0
Melons	each	0	0	0	0	ditto	℔ 100	1	0	2	0

VEGETABLES.

	s.	d.		s.	d.		s.	d.		s.	d.
Artichokes	doz.	4	0 to	6	0	Leeks	bunch	0	4 to	0	6
Asparagus	℔ 100	4	0	8	0	Lettace	doz.	1	0	2	0
Beans, Kidney	℔ 100	1	0	2	0	Mushrooms	pottle	1	0	2	6
Broad	bushel	0	0	0	0	Mustard & Cress	punnet	0	2	0	0
Beet, Red	doz.	2	0	3	0	Onions	bushel	7	6	10	0
Broccoli	bundle	0	9	1	6	pickling	quart	0	0	0	0
Brussels Sprouts	½ sieve	0	0	0	0	Parsley	sieve	3	0	6	0
Cabbage	doz.	1	0	2	0	Parsnips	doz.	0	9	1	0
Capsicums	℔ 100	0	0	0	0	Peas	quart	0	0	0	0
Carrots	bunch	0	4	0	8	Potatoes	bushel	2	0	4	0
Cauliflower	doz.	3	0	8	0	Kidney	do.	3	0	4	0
Celery	bundle	1	6	2	0	Radishes	doz. bunches	0	6	1	0
Coleworts	doz. bunches	3	0	8	0	Rhubarb	bundle	0	4	1	0
Cucumbers	each	0	0	1	6	Savoys	doz.	1	0	2	0
pickling	doz.	0	0	0	0	Sea-kale	basket	2	0	3	0
Endive	doz.	2	0	3	0	Shallots	lb.	0	6	0	0
Fennel	bunch	0	3	0	0	Spinach	bushel	3	0	5	0
Garlic	lb.	0	3	0	0	Tomatoes	doz.	0	0	0	0
Herbs	bunch	0	3	0	0	Turnips	bunch	0	6	0	9
Horseradish	bundle	3	0	5	0	Vegetable Marrows	doz.	0	0	0	0

WEEKLY CALENDAR.

Day of Month	Day of Week.	APRIL 27—MAY 3, 1871.	Average Temperature near London. Day.	Night.	Mean.	Rain in 43 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
						Days.	m. h.	m. h.	m. h.	m. h.	Days.	m. s.	
27	Th	Meeting of Royal Society, 8.30 P.M.	59 3	35.7	47.5	18	43 af 4	14 af 7	48 af 9	41 af 1	)	2 26	117
28	F		60.8	35.7	48.2	18	41 4	16 7	55 10	16 2	8	2 35	118
29	S	Anniversary Meeting of Zoological Society.	60.5	37.5	49.0	15	39 4	17 7	after.	47 2	9	2 44	119
30	Sun	3 Sunday after Easter.	61.0	39.1	50.1	17	37 4	19 7	23 1	12 3	10	2 53	120
1	M	Meeting of Entomological Society.	61.4	39.2	50.3	16	35 4	21 7	42 2	35 3	11	3 1	121
2	Tu		62.7	39.1	50.9	15	33 4	23 7	3 4	56 3	12	3 8	122
3	W	Royal Horticultural Society, Fruit, Floral, and General Meeting.	62.4	42.2	52.3	20	31 4	24 7	27 5	15 4	13	3 15	123

From observations taken near London during forty-three years, the average day temperature of the week is 61.2°, and its night temperature 38.3°. The greatest heat was 81°, on the 28th, 1849; and the lowest cold 18°, on the 29th, 1861. The greatest fall of rain was 0.75 inch.

RULES FOR HYBRIDISING AND CROSS-BREEDING.

MY lengthened pursuit of the very fascinating art of hybridising and cross-breeding flowers having enabled me to reduce my practice to a system that is easy to follow and certain to command success, I feel warranted in offering the results of my experience for the consideration of amateurs, trusting that many will follow my example, and that they may derive the same amount of interest as I have enjoyed while riding this, my favourite, hobby. The hints that I propose to offer are applicable, with modifications, to most genera of plants, though they have special reference to those having flowers of a tubular form, which latter may, with few exceptions, be brought under entire subjection to the will of the operator. Primulas, Polyanthuses, Phloxes, Petunias, Periwinkles, Verbenas, Thunbergias, Achimenes, and a host of other genera are only awaiting the attention of scientific hybridists to develope a large increase of floral beauty.

To insure success nothing must be left to chance. Each seed or pod of seed ought to be the result of careful thought and manipulation, undisturbed by the interference of winds or insects.

The system which I advocate requires the strict observance of three rules—viz., isolation, preparation, and registration. These rules I will consider in their turn, and then conclude with a few remarks.

Isolation can only be secured by having the seed-bearing plants in pots, to allow the hybridist during the period of fertilisation to keep them apart from the general collection.

Preparation is effected by removing all blooms that are either fully expanded or more than half formed. As the buds arrive at this stage of growth, with a pair of fine dissecting scissors cut open the right side quite to the base of the calyx, and then extract the anthers without shedding the pollen. When the mutilated flowers are almost ready to fall, touch the stigma with an anther from the plant you wish to cross with, which can be conveniently accomplished by using a small pair of fly-dressers' tweezers.

Having done this, registration becomes necessary the observance of which is of great importance, for by its aid the requisite quantity of seed of each cross can be secured, and excess is avoided. Again, in the case of failure, the operator can begin *de novo*, or after repeated defeats he can decide what species will not hybridise.

Registration is comprehensively carried out by ruling a metallic paper memorandum book to the annexed pattern—

1	blandus	W.T. 2 W.T.	o.s. 3	B.T. 6			
2	pictus	3 W.S.					
3	oculatus	6					
4	ruber						
5	nanus						
6	fulvus						

The pocket of the book will hold scissors and tweezers, with a supply of white, black, and grey thread, also white, black, orange, and gentian silk.

The first column shows the numbers that represent the various plants that are named, in the second column the squares record the different crosses that have been made. Thus a glance at the registration table shows that No. 1, or blandus, has been fertilised with pictus, oculatus, and fulvus, and that white thread, orange silk, and black thread distinguish the respective crosses. By doubling the threads, or combining the various colours, any reasonable number of registrations may be recorded.

Lastly, let me advise beginners not to be soon discouraged, for even those who possess an average knowledge of the practice of cross-breeding require to work for two or three years on any species they may wish to improve before they are able to do so to the greatest advantage. —A. Clapham.

EARLY-FLOWERING SHOW PELARGONIUMS.

There was in a recent number of the Journal [page 157] an interesting article on this very useful class of conservatory decorative plants. I have not the number to refer to, but the article emanated from Drayton Manor Gardens, and gave practical details of cultivation in the production of early bloom. A list of varieties was given, Crimson King, if I recollect rightly, occupying a prominent place. Having a continuous display of flowers to keep up, and having considerable demands for cut blooms for room decoration, I find nothing more useful during the months of March and April than this very useful class of plants; indeed, so acceptable are they, and so greatly admired, that I wonder how they can be dispensed with to the extent they are. No plants can be cut with less injury, and none give a greater variety of colours, or have a better appearance in vases, epergnes, &c.

Without making cultural remarks, which would only be a repetition of the article referred to, I shall enumerate a few kinds which never fail to do good service with me, and which will do as well with others who require them. All the varieties named I have in bloom now, several of them having been flowering for some weeks past. Crimson King is undoubtedly one of the earliest, but it is not bright enough, and has a wiry habit of growth which is a drawback; still, on account of its natural precocity it can hardly be dispensed with. A sort quite as early, and in all respects better, I find in Floribunda; it is deeper in colour, a better trusser, and more rigid in habit. Another in this line of colour is Gauntlet, a very useful variety; and one a few days later, but better than either, is La Crimée. The old, but still good, French variety Eugène Duval is very useful as an early bloomer. It is rather prone to legginess, but the trusses are always good. Distinction has been in fine bloom a long time; it is one of the best. A few other dark varieties, better than the above in point of intrinsic merit, although not so early by a fortnight, are Leviathan, Charles Turner, Incomparable, Mrs. C. Binder, and Beacon. These are of bright colours, and may be gay in the early days of April. Diadem, fine at any

time, is in full bloom now, but a bad habit common to this variety is to go blind, by the tips of the shoots terminating in a robust abnormal leaf.

Of light varieties, the best of all, and the best and most useful Pelargonium for stage effect and cut blooms that I have grown, is Larkfield Rival. It is white, with a lovely tinge of pink in the upper petals. Its trusses are very large, and it is as sturdy in habit when in bloom in March as any other variety is in June; indeed it shows no evidence of being forced at all. Nothing can be finer in bouquets than this. It is a most attractive subject in the greenhouse, and is generally admired. It is hardly to be found in catalogues, being crowded out by later introductions—better, perhaps, in form of flower, judged by the florists' standard, but there are few better in point of usefulness to the gardener in the early days of spring. It is deserving of more extended cultivation. Snowdrop is early and useful; so is Madame Laffay, especially for cutting from. Patroness and Lilacina close my list; they are better than the others in point of form, but not quite so early, yet perhaps early enough to be out of bloom by the time this is in print.

A further enumeration of varieties specially early from practical cultivators would be of much assistance to gardeners and others interested, who may be adding to their collections of this pre-eminently useful but partially ignored class of plants. Another advantage they possess is that the blooms travel well if they are cut—and this must be attended to—when just opening. If the flowers are expanded at the time of cutting, the petals will fall before they reach their destination. I am told by my employers that nothing is more admired in cut blooms, by the family and their London friends, than these early Pelargoniums sent up amongst other plants for drawing-room decoration.

If hybridists would turn their attention to the subject, and handle Larkfield Rival thoughtfully, I feel sure they would produce something worthy of their skill and efforts. There is a wide field open. Natural earliness, and close rigid habit, are the points to be aimed at and to be attained. Points of culture are very simple. Ripen the wood well, and cut the plants down at the end of June; shake them out and place them in pots of about the same size, or a size smaller; grow them out of doors, sheltering them only from heavy rains; never stop the shoots, nor shift into larger pots until they knot for bloom at the turn of the year; then put them in their blooming pots, and the work is done, always keeping a watchful eye for insects. —J. W., *Lincoln.*

THE CRITTENDEN DAMSON.

About a year ago, when the fruit orchards were in their gayest spring garb, I described the condition of a small fruit farm in the parish of East Farleigh, belonging to and in the occupation of Mr. John Crittenden, and subsequently in the autumn adverted to it again in calling attention to a very prolific Damson with which Mr. Crittenden's name is associated. From some remarks then made by other fruit-growers and propagators of trees, there appeared to be a doubt whether the variety might not be one that some one else might claim as well. Another visit to the worthy Kentish yeoman has put me in possession of more particulars as to the origin of this variety, its productive character, and I may say the fertility of the little plot of ground which Mr. Crittenden occupies. I shall give the figures as furnished to me by a nephew of Mr. Crittenden, who assists him in his market transactions, and I have waited until this could be ascertained with accuracy from the salesman's returns. I believe that the total produce will bear comparison with that of any similar-sized plot in other localities, and I would certainly commend it to the consideration of those about to embark in any of the new-fashioned modes of fruit-growing on very small trees, as recommended by some authorities in such matters. I would especially ask them for an example of similar productiveness in their miniature orchards, or, it may be, orchards of diminutive trees.

First of all I will state that the site of Mr. Crittenden's orchard is in no respect very different from those of hundreds of others surrounding it, the district being one vast orchard, with large breadths of Hops, and a few small fields of corn and grass, intermingled with irregular patches of coppice, which give a picturesque appearance to the whole. The soil, to judge from its appearance only, is far from being what a farmer in the midland counties would call fertile, and for many agricultural crops of only one year's growth it is certainly not favourable: but the healthy condition of the hedges and forest trees, as well as the fruit trees and Hops, unmistakeably show that the subsoil is all that can be desired. It is remarkably dry, for I believe that water is only obtained by sinking upwards of 100 feet. Decomposed limestone in its various forms constitutes much of the under strata, while the top is far from being free from stones, but all large ones have been removed long ago where cultivation has been going on. The surface soil, however, does not exhibit that mellow, fat condition which is often thought the token of great productiveness.

Having on a former occasion given an outline of the district of which Mr. Crittenden's little freehold forms a part, I may merely say that, taken as a whole, it forms an irregular oblong. A parish road is the boundary on two of its sides, on the west it is bounded by an orchard, while on the north side there is no shelter whatever, and that is the coldest side, where shelter would be of service, but it is not there. The farmhouse, a convenient building of its class, occupies one corner, and attached to it there are some necessary farm buildings and a garden; there are, besides, two cottages with small gardens attached. I mention these buildings, as the ground they occupy is included in the measurement of the land given below, although not helping to produce the fruit. A portion of the ground is in grass, with some old Apples and other trees upon it, the rest is in tillage, a part being in Hops alone, a part in Hops mixed with Damson trees, and a part in Damson trees of from twelve to sixteen years' growth. These are standard trees on stems from 5 to 6 feet high, with Red Currants beneath. The whole of the trees are pruned and managed in the way common in the neighbourhood. The pruning of the Currants, which, I may remark, are mostly Red, is very severe, while that of the Damson now consists in merely shortening some of the tips of the shoots growing to an unwieldy length; but when the trees were younger the knife was more freely used. There being but little manure made on the farm, most of it had to be purchased, and it has been of various kinds, stable manure being the least used of any, as it seems to be all bespoke before it reaches so far from town; nevertheless, a liberal and judicious application of manure is necessary to insure a proper return, and Mr. Crittenden has not been behind his neighbours in employing it.

I now give the produce as derived from the figures furnished by the London salesman, and which are, therefore, not a mere conjecture or calculation. It is as follows:—601 bushels of Damsons, 100 bushels of Apples, 60 bushels of Currants, 3 bushels of Cherries, 3 bushels of Gooseberries, 17½ cwt. of Hops. The above is all from 3 acres 1 rood 30 perches, or rather from less than 3 acres, for the site of the farmhouse, its garden and yards, as well as the two cottages and their gardens, are all included in the measurement, which, I may observe, is that of the Ordnance Survey, a former survey making the property 3 acres 2 roods, which I believe is the area stated last year. Might I ask for an authentic example of a like kind from any other source? I may further observe that the Damsons, Currants, and Hops appear to have all been grown on about 2 acres; the plot could not be much more, from the space occupied by the other crops.

And now for the origin of this Damson, which has been planted by thousands in this neighbourhood of late years to the exclusion of all others, and occasionally we hear of litigation following where a spurious kind is substituted for it. Some time ago a writer in this Journal asked who is Mr. Crittenden? hinting that the Damson referred to must be that which he (the writer) had some twenty years ago; but if he goes no further back than twenty years, he has a poor chance of claiming the parentage of this fruit. Mr. Crittenden at his next birthday will be fourscore; and although he cannot precisely say to a year or two when it came into his hands, it was, nevertheless, when he was a very young man, between fifty and sixty years ago, and he and a relative of his, a Mr. Green, also a fruit-grower in the same neighbourhood, had it between them for several years, until it came surreptitiously into the hands of others, before a quantity of it could be obtained. It was some years before its reputation was fairly recognised, and then trees could hardly be supplied fast enough. It has of late years been extensively planted by most, if not all, of those who have planted Damsons, and, judging from appearances, this fruit is likely to be more plentiful hereafter than it has been of late, for many trees are planted in hedgerows and other unpromising places, the anxiety to make the most of every inch of land inducing planters to economise all they can. As a fruit it is not so large as the Prune or Shropshire Damson, neither is it so sweet as one locally termed the old kind, but it far ex-

ceeds them all in its good bearing qualities, rarely or never missing a crop, and often yielding a heavy one, as Mr. Crittenden has had more fruit in some seasons than he had last year, which is not given as an exceptional season, but as a good average year.

The features of the tree differ but little from those of other Damsons, excepting in one particular, and on that, perhaps, its merits may in some degree depend—it is later in blooming than most others. This was very perceptible during the present season, where the old Sweet Damson was grown in the same locality as Crittenden's Prolific, as it is often called, the former being in full flower some days before the latter. The heavy bearing of the tree causes a partial downward bending in the branches, and these often break when not propped up. Its long and remarkable clusters of fruit are a great recommendation; another is its adaptability to almost any situation. If anyone has a Damson which equals Crittenden's in productiveness, and has the means of showing figures like the above, I shall be glad to hear of it.—JOHN ROBSON.

VIOLETS—DIELYTRA CUCULLARIA.

WHILE you are recording the experiences of your correspondents about Violets allow me to add mine. The varieties I have are King, Queen, Tree, Old Blue, White, Brandyana, Marie Louise, Red, and Neapolitan of the doubles; and Russian, Czar, Devoniensis, White, Wilsoni, Odorata (of New York), Californica, Obliqua Striata, Cucullata, and Pedata of the singles. All are scented except the last four, and all hardy except the last. The last four are also deciduous.

In regard to the double varieties all are good, but their great fault is unquestionably their short stalks; and I doubt, if a number of blooms were mixed together, whether anyone could distinguish between King, Tree, and Old Blue—I cannot. It is possible I may not have King true, but in growth and everything it is only the Old Blue. Queen is very fine, but not white. It does not do so well in a frame as the Neapolitan, though in the open border the full sun does not affect it. However, my purest blooms I always gather at the back of a hedge in poor gravelly soil. Marie Louise, sent out two years ago, seems nothing particular, but I have hardly had time to give it a fair trial. Red I can make nothing of; it is a poor miffy plant with me.

With regard to single varieties nothing can approach Czar in my opinion, though it is a little tender, and its leaves are disfigured by frost; but for size, for scent, and for strength of growth it is unequalled. Devoniensis is good for its colour, scent, and length of stalk. Russian and White grow much where they please in my garden, and to any amount. Odorata (of New York) I have not yet bloomed. Californica is a fine late sort with no scent. Cucullata, highly spoken of, is no better than Viola canina of the hedges. Pedata is very pretty, blooming twice in the year, but wants a cold frame. Wilsoni is a new variety, late and very sweet, with a pleasing colour, but the flower is bad. Of course all are not now in bloom, but I send what I can gather.

"G. L." and "J. W." have written so much and so well upon the culture of Violets that little more need be said. I may, however, remark that seed often remains in the ground for twelve months before it vegetates. "J. W." says that The Czar reproduces itself truly from seed. I can only say that three years ago I sowed a quantity of seed gathered by myself. After it had remained in the ground for twelve months plants came up. I planted out a large bed of the seedlings, which bloomed last year; every one of them turned out to be the common white Violet, there was not a blue one in the whole bed. I have occasionally saved seed from the Double Blue, which appeared perfectly good, but I cannot persuade it to vegetate.

While writing, I wish to take the opportunity of saying that I have at last persuaded Dielytra cucullaria to bloom, after having had it in possession ten years. I remember that a few years ago you requested me, if ever I succeeded in flowering it, I would send you a bloom. I have much pleasure in now complying with your request. It is a poor thing, and utterly unlike the coloured plate of it, the beauty of which induced me originally to purchase it. I think the plate appeared in one of Van Houtte's works.—A. R.

[The specimens enclosed were very superior. Those of Queen are always stained with blue. Many years since we grew a more densely purple and more densely double variety than we now see anywhere. The soil was light, on a gravelly subsoil, and the garden an old one, full of old-fashioned flowers and old fruit trees.

We do not agree with you in your estimate of the Dielytra cucullaria. The white waxen flowers among the pale green foliage surely must look graceful. Do not condemn it, but grow it a little more luxuriantly. Your flowers are the first we have seen, although the plant was introduced in 1731, and is portraited in the "Botanical Magazine," t. 1127, under the name of Fumaria cucullaria, or Two-spurred Fumitory. As in your specimen, there are six flowers on the stalk, but rather larger than yours.—EDS.]

THINNING GRAPES.

THINNING the fruit is by no means the least important part of Grape culture. It requires the combination of great care and sound judgment, as well as patience; therefore such work should not be entrusted to those who do not show a capability for it, for it is a very easy matter to spoil the appearance of a bunch, and, indeed, to injure a whole crop by a too careless or injudicious application of the scissors. Many cultivators consider thinning Grapes the most perplexing part of gardening, and are very impatient over it, owing, perhaps, principally to their having had many times to place themselves in very awkward and inconvenient postures in order to perform the work. Through such disinclination to commence the work and want of perseverance, as well as the pressure of other work at the same time, the crop is often irreparably injured by the berries becoming too crowded and large; consequently when thinning is done a sudden and unnatural check is given to the flow of the Vine's juices, and there is a loss of much that would have been directed towards, and stored up in, the berries which would have remained after an earlier thinning; an imperfectly developed and an uneven crop is the result.

When the berries commence swelling after they are set, thinning should also begin, for besides other advantages it is then easier to select the berries for cutting out and to shape out the bunch than at any other time, and one berry can be cut out without touching its neighbour—a thing always to be avoided, for almost the lightest touch with the hand or a puncture with the points of the scissors, though perhaps not seen at the time, will, as the berry approaches maturity, come out as a great eyesore and an objection to a good Grape-grower; and to the exhibitor of such Grapes it may be the means of placing him a stage or two lower in the prize list. In selecting a bunch of Grapes for thinning, my first operation would be to shape the upper part of the bunch by tying out its loose shoulders, if any, with finely twisted matting; and in order to hold the bunch steady I use a twig from a birch broom about 8 inches long, with a crochet at one end like a prop, and a hook at the other end, so that the bunch or any part of it can be pushed from the operator or brought nearer to him without leaving a mark of any kind. Next comes the thinning of the berries. The distance at which they should be left apart depends greatly upon the variety and the crop to be taken from it, also the general vigour of the plant, and whether young or old; for instance, the berries of a Black Hamburgh, Muscat of Alexandria, and others of that class and size, must be left at a greater distance than those of a Frontignan or Sweetwater. At some places, and on heavily cropped old Vines, the berries will not swell to more than two-thirds the size of those at another place, therefore such matters must be taken into consideration. However, I guard as much as possible against overcropping; I believe that more mischief results from inattention to this than many like to attribute to it.

In thinning the berries a well-formed bunch should be aimed at; if they have set well there will be no difficulty in this. Retain the largest berries with the strongest footstalks. I commence generally at the point of the bunch first, and take care to leave the centre berry of every branchlet. I like to see vigorous strings to the berries, and consider it anything but a good sign when the string is too weak to support the berry in its place; it is a pretty sure sign of imperfect root action, and most likely shanking to a large extent.—THOMAS RECORD.

WILD GERANIUMS.

THE remarks of your correspondent "W. E.," in the number of April 6th, have been perused by me with sincere pleasure. I had long entertained views in harmony with his as regards the enjoyment to be derived from the cultivation of plants so

likely to produce striking varieties of foliage—perchance also of flowers—as those which he has introduced to the notice of your readers.

Passionately fond of wild flowers from childhood, I have heretofore been prevented from making experiments such as those suggested by "W. E.," owing to want of space in my little garden allotment. Last year, however, I made a start on a very limited scale, but the result has been such as to embolden me in prosecuting the experiment.

Geranium columbinum is somewhat scarce in this part of the kingdom (West Cumberland). The species which I have taken into favour are G. lucidum, molle, sylvaticum, sanguineum, and pratense. Of the last-named I have occasionally met with wild specimens having variegated leaves; others I have noticed bearing beautiful white flowers, instead of the normal bluish-purple, and I wondered much whether these forms could be reproduced from seed "true to their kinds."

Sanguineum, from the brilliancy of its flowers, has made its way into many a cottage garden in this locality, having been transplanted from the shores of the Solway Frith, where it may sometimes be met with abundantly; its bright blossoms forming a striking contrast to the surrounding colours, especially when seen just peeping above the surface of the closely-cropped green sward, level almost as a carpet, its own proper foliage being completely hidden among the grass.—H.

ROYAL HORTICULTURAL SOCIETY OF IRELAND'S SPRING EXHIBITION.

There are drawbacks connected with most of our enjoyments, and so with revisiting scenes where one has played a part in times past. It is pleasant to see the old places, to meet friends whom one has known and not seen for years; but it is a little drawback to be told, "Dear me! how old you are getting! Well, I declare, I should never have known you!" and such like. But yet we must be prepared for all this, and after the first brush one becomes accustomed to it, begins to think that a bald head is venerable, and that grey hairs are perhaps preferable to brown.

I had just had time to pack up my Auriculas on Wednesday at Kensington, see them off, and then drive as hard as I could to Euston Square and get off to Dublin, where I was to judge at the spring exhibition of the Royal Horticultural Society of Ireland, and the remarks that I have to make are thus made with both exhibitions in my mind.

The show was held in the gardens attached to the exhibition building, which those liberal citizens of Dublin, the Guinnesses, have purchased in order to secure it as a recreation place for the inhabitants of the city. The plants were all staged in tents, of which there were five, while the building was used as a promenade—an arrangement infinitely better than the old plan of holding shows in the dark gloomy Rotunda, and with the tents in the garden; still, I cannot but think that a better plan would be to hold the show in the building, with an awning stretched over the plants as at the Crystal Palace. I need not say the arrangement was immeasurably beyond Kensington, for one tent was devoted to greenhouse plants, &c., another to Azaleas, another to florists' flowers, &c.; and I could not but be struck with the immense strides that had been made in plant-growing since my younger days.

In looking at the plants, as compared with the London shows I could see very little in the Azaleas of inferiority. The large plants were very fine, although in some few cases they were not evenly bloomed; whether owing to their having been in a house and not sufficiently turned, or being neglected when set out of doors in the summer, I cannot say, but there were a few plants that exhibited this defect. The smaller plants were perfect and these are to me more pleasing. Amongst other things I may say Roses in pots were very well done, and I have nowhere seen so good a plant of Adiantum farleyense as that exhibited by Mr. Watson, nor a fine Anthurium Scherzerianum than that of Capt. Coote.

Florists' flowers consisted of Hyacinths, Auriculas, Roses, and Pansies. With regard to the first, it was of course much too late, yet a superb set of eighteen was exhibited by Mr. S. M. Tandy, who may be styled the champion Hyacinth grower of Ireland, as he won the cup last year and again this season. He had immense difficulty in keeping them back, and the manner in which the foliage was grown, stiff and upright, did him great credit. Mr. Henry Roe also exhibited a very fine eighteen, but it is not fair to the Hyacinth to give prizes on April 20th; and although financially the Hyacinth show did not succeed last year, yet I cannot but think, if held at the Exhibition Palace, and Cyclamens and a few other spring flowers were added, the experiment would be a success if tried again. The cut blooms of Roses were very good. I see that here it is allowed to show foliage not belonging to the truss. I cannot say I see the evil of it, and it certainly adds to the appearance of the stand.

Auriculas, I do not hesitate to say, were far in advance of those exhibited at Kensington; there were more competitors, and the flowers were better. Here again Mr. Tandy came in first in both classes of eight and four; some of his flowers were models of good cultivation, while the sorts were those which are also considered on our side to be the best—George Lightbody, Richard Headly, Chapman's Maria, Waterhouse's Conqueror, Lord Clyde, Lancashire Hero, and others. There was an inclination with some growers to grow them too strong, and so get size at the expense of refinement. If any of them should read these lines, will they bear with me if I say this is to be deplored? I look upon the Dublin florists as in many things in advance of the metropolitan ones, and do not let them get into the vicious habit which we are endeavouring to correct by our Metropolitan Floral Society. Pansies were very indifferent; badly grown, and badly set up.

On the whole, I think the Dublin folks are to be congratulated on the advance that they have made in plant and flower culture, while whatever difference of opinion might exist as to the relative merits of the two cities in floriculture, there is one point in which Dublin holds, as it has ever done, its pre-eminence: if one turned from the tents to the promenade, there was no difficulty in seeing that in the beauty of the fair sex Kensington could not for one moment bear the comparison.

I have finally to thank many lovers of flowers who only know me by name for their hearty welcome, and had I the time it would have been no difficult matter to have made out my summer amongst the invitations showered upon me.—D., *Deal*.

ROSES.

My experience of the effect of the last severe winter on the wood of Roses is the same as Mr. Peach's. The old and very strong wood was destroyed, and the green twigs were comparatively unharmed. The plants look well at present, and are in forward and abundant bud.

As no one has answered Mr. Peach's question about Souvenir de Poiteau, I give my experience of it. I had only one little plant of it, about 10 inches high, in a pot. It produced seven or eight very nice blooms, presenting a level appearance, with nicely-arranged petals. At the fall I received two fine plants on the Manetti stock which testified its vigorous growth: hence I recommended it.

I have not bloomed the following, but they look very promising—viz., Comtesse d'Oxford, Paul Neron, Madame W. Paul (Moss), and Abbé Giraudier. The growth, foliage, and buds of the first are fine. In due time I shall be able to speak of these and others. Louis Van Houtte, if it is a good grower, is very choice. I think Mdlle. Eugénie Verdier, very substantial in the petals, will be one of the best of the new light-coloured ones. It is a good grower, and free bloomer.—W. F. Radclyffe.

TRAPPING WOODLICE—EFFECTS OF LAST WINTER'S FROSTS.

About twelve months ago some one wrote in "our Journal" to say that a bell-glass plunged in soil up to the rim, with a sliced potato at the bottom, was a good trap for woodlice. I have to thank the writer for the information. I have at the present time, in a hotbed, some hundreds crawling about in the bell-glass. They cannot get out if the inside of the glass is clean. My pans used to be nearly cleared of the seedlings, now they are not injured by the woodlice.

The sharpest frost we had here (near Wallingford) was on the night of the 24th of December, the thermometer (Negretti's) on a south wall, at 4 feet from the ground, went down to only 5° above zero.

Broccolis laid down were all killed. They were Snow's Winter, Chappel's Cream, and Wilcove Late. Portugal Cabbages, which I thought the most tender of the tribe, were uninjured, while Savoys adjoining, with firm heads, were destroyed. Those partly closed were uninjured. Brussels Sprouts and Buda Kale were not injured. Cauliflowers under hand-lights covered with straw were all killed. Some of the same potted and in a

ground vinery, with litter over them, were safe. Autumn-sown Cabbages were nearly all killed. Celery covered with litter was frozen to the roots, while some planted more deeply in a neighbouring garden came out sound. Hammersmith Hardy Lettuces were killed. A few stray ones starving on a piece of poor soil stood well, and are now fine. Tripoli Onions and Spinach were not injured. Antirrhinums, Sweet Williams, Golden Pyrethrum, Clarkia, Silene, Wallflowers, &c., are uninjured. Limnanthes Douglasii, Sedum cæruleum, and Pampas Grass were all killed. Laurels and other shrubs are not injured. During the frost there was scarcely any wind.—J. E.

PRIMULA AMŒNA AND ITS CULTURE.

I WISH to call the attention of your readers to this lovely plant. I know of none more beautiful at this season of the year to decorate a greenhouse or conservatory. Like other varieties of Primula it is a compact-growing plant, but the flower-stems rise well above the foliage, lifting their blooms about 6 inches clear of the leaves, and thus showing them off to the greatest advantage.

The flowers are large in size, deep rose-coloured, from twelve to twenty radiating from the top of each stem; and as the flower-stems are produced in great profusion, there is a complete sheet of bloom, carried well above the foliage, which cannot fail to strike the eye of everyone who may enter the house where the plants stand. I have in 6-inch pots a number of plants with from sixteen to twenty flower-stems on each, presenting a mass of colour which could not be obtained from any other plant. Better still, these plants are nearly if not quite hardy. Mine have been kept in a cold frame all winter without any covering, and at Christmas, when the thermometer was down to zero on several occasions, the soil in the pots was frequently as hard as the pots themselves. Notwithstanding this, as the warmer days of February came in the plants began to push through the soil (they lose their leaves in autumn) strongly and vigorously, and during the last four or five weeks they have been quite gorgeous. I would strongly advise anyone who has a greenhouse or conservatory to furnish with flowering plants to obtain a stock of this lovely Primula, from which he will secure a maximum of effect with a minimum of labour.

My mode of treatment is simple in the extreme. Just when the plants are pushing through the soil in February, I divide each into two or three pieces or clumps, and pot them in 6-inch pots; in these they remain until they have done flowering, and then they are shifted into 8 or 9-inch pots according to their strength, and they are left to grow all the summer. In spring they are again divided as before, or they may be left in the larger pots to bloom where there are room and convenience for large masses to stand, and then the effect they produce is beyond what can be described on paper. They stand in a cold frame all the year round, except just when they are in flower. When removed to the greenhouse or conservatory they must be placed in the coolest part of it, otherwise they will become drawn. Anyone following these simple directions cannot fail to be rewarded by masses of lovely flowers.—THOMAS JONES, *Gardener to J. E. Taylor, Esq., Didsbury.*

USES OF THE POTATO PLANT.

CAN you tell me if the Potato shaw when boiled is unwholesome? I was some few years in Bermuda, where vegetables were very scarce. I had an experienced cook, who used to pick off the tops of the Potato shaws just as one pinches off the tops of Broad Beans, boiled them, and served them like Spinach, and I thought them very nice, but I have been afraid to use them since those days.—TEN-YEARS READER.

[We know from published statements that the tops of Potato stems have been used as a culinary vegetable in the mode you mention. As the berries, sap, and sprouted tubers contain solanin, a narcotic poison, we should not willingly partake of the tops even when boiled, although we are aware that boiling effects great chemical changes in vegetable produce. Another correspondent asks "What is the best mode of utilising the stems and leaves of Potatoes?" We reply, Use them as a manure. Dug into vacant ground they impart to it more potash than most other vegetable manures. A soft fibre, and used as flax, has been obtained in Austria from the stems.—EDS.]

MYOSOTIS DISSITIFLORA.—Having seen such flaming accounts of this novelty, I procured a packet of seeds, and this morning (April 21st) I observe some flowers opening of a pinkish colour. I send you a sprig, and also one of Myosotis sylvatica, which seems to me the better as well as the earlier.—G. S.

THE CUCUMBER DISEASE.

THE remarks of Mr. Fish on Cucumber disease, at page 271, being so much to the purpose, I venture to ask him and others if they have ever experienced a similar disease in their Melons? Four or five years ago I was told such a complaint had manifested itself a few miles from here, but I did not see it, nor have the Cucumbers been affected in this neighbourhood to the extent they were twenty years ago, when I believe the disease first broke out. I well remember being first made acquainted with it in the spring and summer of 1850, when every plant we had became affected, and scarcely any of the fruit grown was fit for use, for when the disease fairly established itself, the young fruit not larger than one's finger was attacked and rendered useless.

The next year, 1851, I tried all the experiments with soils which I could think of to arrest the progress of the disease, for it was as destructive out of doors as under glass, and I employed many things which might be considered extreme remedies, as soot, lime, charcoal dust, cinder ashes, and all descriptions of soils, thinking I might hit on something that might be serviceable, but all to no purpose. Some of the mixtures, as might be expected, only resulted in a more weakly plant, which the sooner succumbed to the disease. Like Mr. Fish, I gave up the contest with it almost in despair, and the winter following I did not attempt growing any Cucumbers. Strange to say, my plants had very little, if any, disease in the following year, 1852, neither have they been visited with it since to any extent; but I had sufficient experience of it to confirm all Mr. Fish says of its refusing to yield to any remedy.

I do not recollect of the foliage being so much affected as Mr. Fish has described. With me a sort of amber-coloured jelly-looking matter issued from each of the spines, or the places where the spines ought to have been, and enlarged from the size of a mere drop into the dimensions of a boy's marble, being partly embedded in the fruit, rendering the whole a disgusting mass of sores; and I think in our case the foliage was not much affected, but my memory may be at fault, neither do I wish it to be refreshed by a fresh acquaintance with the evil. I can confirm all Mr. Fish's remarks as to the cultivator being powerless in arresting it. In this respect it resembles the Potato disease; both are alike intractable, no one being able to say he can master the latter any more than he can the former. At the same time it is well to try experiments. My opinions at the time were, that the disease was highly infectious, and that until all traces of it were stamped out, as in the more recent case of rinderpest, there was no hope of a remedy, for I tried sufficient experiments in the way of soil, and I can hardly think the plants could be fed with the same juices under all the conditions to which they were subjected. Atmospheric influences seem also incompatible with a complaint raging at all times of the year, for it was as fatal to the winter produce as to the out-door crop in summer, soil from a distance did not lessen the evil, and the most robust kind of ridge Cucumber placed on a hotbed under a frame was as liable to the disease as any other. The idea was entertained at the time that the Cucumber had been bred too fine (as the expression goes), and I tried the reverse course of treatment.

If it is any consolation to those now suffering from the Cucumber disease to know that others have been baffled in combating it in times gone by, I acknowledge myself one. Employers must be unreasonable in attributing the failure of crop to the want of skill on the part of their gardeners, for we have only to look to the Potato for an example of what little avail the united researches of the most learned men in the kingdom have been in averting the disease, for although it is not so destructive every year as it was soon after its first appearance, the comparative feebleness of its attacks is not due to any help from professors of science, but to those natural agencies which I hope will in like manner check, if not remove, the Cucumber disease.—J. ROBSON.

THE COMPASS PLANT.

THE fact that the leaves of the Compass Plant always turn their edges north and south has long been known to the settlers and hunters on the prairies of the Far West, who, when lost

on a dark night, obtain their bearings by feeling the position of the leaves. Longfellow mentions it in "Evangeline":—

> "Look at this delicate plant, that lifts its head from the meadow,
> See how its leaves all point to the north, as true as the magnet;
> It is a Compass Plant," &c.

The plant is, however, coarse and stout, and far from "delicate" and "fragile," while the leaves are, in reality, vertical, and present their edges north and south. The true cause of this so-called "polarity" is the subject of a short article by Mr. Witney in the *American Naturalist*, from which it appears that from the statements of numerous observers there can be little doubt that on the prairies the leaves of this plant do assume a meridional bearing; and the cause assigned for this by Dr. Gray is undoubtedly the correct one—viz., that both sides of the leaf are equally sensitive to light. It only remains to be shown what renders its two sides thus equally sensitive. It is well known that two sides of a leaf usually differ in structure, that the number of stomata, or breathing-holes, is much greater on the under than the upper surface, and that the tissue of the upper is denser than that of the lower stratum. As the two surfaces of the leaf of Silphium laciniatum appeared somewhat alike, Dr. Gray suggested that it would be well to examine the leaf microscopically in order to see if it corresponded with ordinary leaves in the above respects, or with truly vertical leaves, the two surfaces of which are usually similar, or nearly so; also to compare with it the leaves of other species of Silphium, in which no tendency to assume a north and south position is observed. The results of this examination gave the number of the stomata of the Compass Plant leaf as exactly the same on both surfaces, while those of three other species varied considerably. The cellular structure of the leaf of S. laciniatum appears to be homogeneous throughout, and these observations show "that the meridional position of the edges of the leaf is to be explained by the structure of the two surfaces, which being identical, at least in the important respect of the number of the stomata, seek an equal exposure to the light; the mean position of equal exposure, in northern latitudes, being that in which the edges are presented north and south, the latter obtaining the maximum, the former the minimum of illumination."—(*English Mechanic and Chemist.*)

TREES AND SHRUBS VERSUS HARES AND RABBITS.

ANOTHER winter is past, and it has left its traces behind in frozen, destroyed vegetables, and browned shrubs. There are other sources of trouble to a gardener besides that caused by the severity of frost to the tenderest subjects of his charge, and amongst them may be mentioned the damage done by hares and rabbits to trees and shrubs when the ground is for weeks covered with a deep mantle of snow. It is but natural that such animals should in a winter like the past have their appetites so sharpened by an enforced fast that they are glad to take what they would at other times disdain; cut off from their ordinary food by a deep and long-continued covering of snow, they are compelled to take anything that will sustain their existence. I know it is the conviction of some, that hares and rabbits will eat the shoots and the bark of every tree coming in their way in times of severe frost and snow. Such, however, I have not found confirmed by fact. With us there are trees and shrubs the shoots and bark of which the hares and rabbits eat, and there are others which they do not touch. One of your correspondents, in the autumn of last year; cautioned your readers against being "misled by lists of trees and shrubs not liable to be attacked by hares and rabbits," alleging that there are none, or very few, they will not eat in severe weather. Now, as I had given in this Journal a list of trees and shrubs that hares and rabbits had not interfered with, I felt it incumbent on me at the time to say that your correspondent's experience was totally at variance with mine, but I thought it better to wait and see what another winter would do, and having had an unusually sharp one, yet not keen enough to make hares and rabbits eat every tree and shrub they could get at, I have the greater confidence in approaching this subject.

Trees and Shrubs of which Hares and Rabbits have eaten the shoots and gnawed the bark during the winter of 1870-71; *Snow on the ground fifty days; greatest cold* 8°.—Apples and Crabs; in many places Apple trees of considerable size and age have been completely destroyed. Laburnums, even those gas-tarred, were clean barked. Poplar, Ash, Oak, Lime, Larch, Scotch Fir, Spruce, Austrian Pine, the leaflets eaten close in, but neither the points of the shoots nor the bark taken. Holly, some of the variegated, 6 feet high, cut down to 18 inches; leaves, branches, and all eaten; not a tree of less than ten years' growth left without barking as high up as the hares and rabbits could reach, and as low as the padded snow line. Laurustinus cut off to the snow line, the bare shoots being as well done as possible. Common Laurels shared the same fate as the Laurustinus, and Aucubas show only below the snow; Broom taken entirely, and Thorns, Chinese Arbor-Vitæ, Weigela roseæ, Cotoneaster frigida, and C. Simmondsii.

Trees and Shrubs which Hares and Rabbits have not eaten or barked.—Beech, common, purple, and copper; Sycamore, Horsechestnut, Bird Cherry (Cerasus Padus), Corsican Pine (Pinus Laricio), Portugal Laurel, common and Irish Yew, Box, Furze, common and double; Rhododendron, Berberis Aquifolium, Pinus excelsa, P. Cembra, Cupressus Lawsoniana, which makes a dense spreading tree in exposed situations, Azaleas, Lilacs, Snowberry, Ribes sanguineum (the Black Currant spreads here abundantly, and is never touched), Gooseberry, Blackthorn, Sweet Briar, common Berberry, Wellingtonia gigantea, Cedrus atlantica, Pinus Strobus, common and scarlet-berried Elder, Birch, and Euonymus europæus.

The Bramble and Briar have been highly extolled for their covert-making. We had specimens of these, with Blackthorn. The game avoid rather than choose them; rabbits take to the Furze; pheasants rise from the Portugal Laurel and Cupressus; hares take to the former, and partridges select the foot of a Pinus excelsa for nesting in preference to the vaunted Bramble, Briar, and coarse grass covert. Not a hare, rabbit, nor bird frequents them one tithe so much as they do the evergreen coverts; they may take to Brambles and Briars, where there is none else, but give them a chance of an evergreen one with its warmth and dryness, and the greater opportunity of keeping out of sight, and it will soon be apparent which is best. In winter Brambles and Briars afford no shelter to game, as is evidenced by the few birds found in them. Besides their inutility as covert, Brambles and Hazels are only a means of causing to be disturbed that quiet which game needs for its continuance at a given place. Game cares nothing about the nut of the Hazel, and the fruit of the Berberry does not remain half so long as Brambles on bushes where pheasants are. For its formidable character the Canadian Gooseberry is superior to the Briar, and pheasants are very fond of the berries; and the Sweet Briar does so well, and lends so sweet a charm to rural walks, that its presence deserves to be more apparent than it is. Game can, no doubt, be had by planting, or rather retaining, a primæval vegetation, but there is no reason why coverts should not possess interest and beauty for the eye of the sportsman, as well as game for his skill.—G. ABBEY.

ENTOMOLOGICAL SOCIETY'S MEETINGS.

AT the second March meeting of this Society, held on the 20th of that month, the Rev. Leonard Jenyns (with reference to the observations recorded in the Society's proceedings of last autumn relative to the appearance of large swarms of minute flies—Chlorops lineata—in the Provost's Lodge, King's College, Cambridge) stated that he had published an account of a precisely similar swarm in the same rooms thirty-nine years ago (Loudon's Mag. Nat. Hist., vol. v., p. 302), and that he accepted the opinion that it was with a view to hybernation that they had entered the house.

Mr. Albert Müller made some observations on specimens of the Meadow-brown Butterfly, Cænonympha Satyrion, taken in different parts of Switzerland, which he found to exhibit a general tendency to variation, without such variation being restricted to the opposite sides of the mountain ranges, as had been assumed by Mr. Butler at the last meeting of the Society. Mr. Müller also exhibited an undescribed species of gall found by Lord Walsingham on a Carex near Thetford, Norfolk, which was of an oblong form and the size of a grain of Wheat, but from which he had not succeeded in obtaining the perfect insect. Mr. Verrall exhibited a specimen of a Syrphideous fly (Pipizanoctiluca), having some extraneous matter attached to the head, which was regarded either as a fungoid growth or as the pollinia of an Orchis.

Mr. C. O. Waterhouse communicated a paper on a new genus and species of Stag Beetles (Apterocylus honolulensis) from the Sandwich Islands, allied to the genus Colophon, *Westw.*

Mr. Vernon Wollaston communicated a memoir "On Additions to the Atlantic Coleoptera," consisting of descriptions of thirty-three additional species, of which sixteen were new, thus bringing up the total number of Beetles found in these oceanic islands to 1480. In the introduction to this memoir the author entered into an examination of the question of the origin of the Beetle fauna of these islands with reference to the recently-published views of Mr. Wallace and Mr. Andrew Murray, and which he maintained had resulted from a former

general land connection between these various groups of islands, as well as with south-western Europe, which had subsequently been broken up by some gigantic catastrophe; whereas Mr. Wallace contended that they were the result of atmospheric phenomena, such as storms and hurricanes, which, however, Mr. Wollaston asserted were of very rare occurrence in that part of the Atlantic, the wind blowing as a moderate breeze almost uninterruptedly from the north-east, with an occasional storm from the south, sufficient to account for the introduction of the few African forms amongst the insects, but not sufficient to have caused so large a per-centage of Mediterranean forms as were exhibited. Mr. Bates, in the subsequent discussion upon the paper, objected to the idea of "great catastrophes," such as would have produced a sinking of the depth of the ocean between the Azores and Europe to the depth of 12 or 15,000 feet, considering that geological changes were extremely slow in their operation. A protracted discussion upon this subject took place, in which Messrs. Wallace and A. Murray also took part.

The April meeting of this Society was held at Burlington House on the 3rd inst., the President, Mr. A. R. Wallace, being in the chair Among the donations received by the Society since the last meeting was a valuable Report of the Fruit-growers' Association of Ontario for 1870, published at Toronto at the beginning of the present year. Mr. Holdsworth sent a series of carefully executed drawings of Chinese Moths, some of which exhibited great similarity to English species. Mr. F. Smith exhibited and described several singular specimens of well-known British bees and other Hymenopterous insects, in which one side of the body and its corresponding limbs were of one sex, whilst the other side and limbs were of the opposite sex. One of these individuals was the common honey bee, and it was suggested that this was especially interesting in connection with the lately observed facts relative to the parthenogenesis of Apis mellifica. Other instances of Hymeneptera similarly monstrous were mentioned by Mr. MacLachlan and Professor Westwood. The last-named gentleman stated in reference to a communication received by Mr. A. Müller from M. Lichtenstein, of Montpellier, that he had not considered the insect which has recently proved so destructive to Vines in France and England, to be identical with the Vine insect described in America by Mr. Riley, the state entomologist of Missouri.

Mr. A. Müller communicated a memoir by Herr Gredler on the distribution of Coleopterous insects at various heights on the Alps, showing that Beetles taken at equal heights on the opposite sides of the mountains exhibited no difference, thus opposing the suggestion of Mr. Butler made at a previous meeting with reference to differences in the individuals of Cænonympha Satyrion taken at Kandersteg and Leukerbad. Mr. Lewis mentioned the injurious effects of Lepismæ upon the covers of books, those insects attacking everything to which paste had been applied; and Mr. Horne stated that in India they were one of the greatest pests, gnawing the paper from the walls of apartments, &c.

A paper was read by Mr. Lewis on certain alterations which had recently been made in the classification of the principal groups of nocturnal Lepidoptera, which he considered not only as injudicious and unnatural in themselves, but as censurable from their having been introduced in mere labelling catalogues, without any explanation of the reasons on which they had been made. He also strongly objected to the practice, which has recently become common, of rejecting the name of well-known species which had been in general acceptation, in favour of names published previously in obscure publications, and which had never been generally adopted. He insisted that the well-known legal maxim, *Communis error facit jus—i.e.*, an error accepted by all the world becomes a law—is as applicable in scientific nomenclature as it is in ethics.

NOTES AND GLEANINGS.

Proposed International Fruit and Flower Show at Glasgow.—A meeting of the Directors of the Glasgow and West of Scotland Horticultural Society was held on the 19th inst. The question of an International Fruit and Flower Show, to be held at Glasgow in September, 1872, was considered. The opinion of the meeting was that the time had now arrived when it was necessary for the interests of horticulture in the west of Scotland, and for the reputation of Glasgow in horticultural matters, that such an international show be held at Glasgow. The object is to bring thither collections of fruit from not only all parts of the United Kingdom, but also from all foreign countries with which the Clyde ports have commerce. It was ultimately resolved that a special fund of at least £1000 be raised for this purpose; and a large and influential committee, comprising many of the leading gentlemen in the city and neighbourhood, was appointed to organise and mature the scheme, with Mr. A. B. Stewart (of Messrs. Stewart & Macdonald), as convener of committee.

—— Death of Mr. W. B. Page.—Gardeners are a long-lived race, and another evidence is afforded by Mr. Page. He died aged eighty-one at Hill, Southampton, on the 12th inst. He had long carried on an extensive trade in that town, and until a few years since was much consulted as a landscape gardener. As long ago as 1818 he published a very well-arranged "Prodromus, a general Nomenclature of all Plants, indigenous and exotic, cultivated in the Southampton Botanic Garden." It contains much useful information relative to culture, soil, time of flowering, &c., and it is stated on the title-page to be "By William Bridgewater Page (from Lee & Kennedy's, Hammersmith), Nurseryman, Seedsman, and Florist (by special appointment), to Prince Leopold and the late Princess Charlotte," and that includes the whole of his biography known to us.

—— The culture of Bamboo for paper-making and other purposes is being promoted by the Government of Central India. The Indian Government is buying land in the hill district of the Neilgheries for a spice plantation. Col. Boddam has proposed the cultivation of the Sunflower in Mysore. It is very successful in France. Government has sent out six more Scotch gardeners for experimental cotton-growing. These men have answered very well.—(*Nature.*)

—— The Broom (Sarothamnus scoparius) is extremely abundant in Madeira, but is supposed to have been originally introduced to the island. It is now sown extensively on the mountains for the purpose of being cut down for firing, or burnt on the spot every five to seven years to fertilise the ground. The twigs and more slender branches are also used commonly as withs for binding bundles of faggots, brushwood, Fern, &c.; and numbers of country people, especially young girls and children, residing within reach of Funchal, gain a livelihood by bringing daily into the town bundles of broom for use in heating ovens, &c. The fine and delicate basket-work peculiar to Madeira is manufactured from the slender peeled twigs of this plant. Mr. Lowe speaks of a variety with pure white flowers which occurs on this island.—(*Nature*)

—— The Eucalypti, or Gum-trees of Australia, are well-known for their hard wood as well as for the oils and gums yielded by many of them. Some of the species have been introduced and successfully grown in different parts of Europe, and their products may become, ere long, recognised articles of import. At the present time large quantities of sticks of a species of Eucalyptus are imported into England from Algeria, and are made into walking sticks. During the Great Exhibition in Paris in 1867, the leaves of Eucalyptus globulus were made into cigars, and recommended as being very efficient in aiding digestion.—(*Nature.*)

—— The Prickly Poppy (Argemone mexicana), originally from the New World, has become naturalised throughout the tropics and sub-tropics of both hemispheres. In the West Indies, where it is very abundant, it is called *Fico del inferno*, the reason for this name being, according to Gerarde, "because of his fruit, which doth much resemble a Figge in shape and bignesse, but so full of sharp and venemous prickles that whosoever had one of them in his throat doubtless it would send him packing either to heaven or to hell." Barham, however, gives, as an explanation, a statement that the seeds, "being much stronger than opium," are "enough to send any that should take them wilfully to *inferno*;" but this is much exaggerated. In India it is now abundantly naturalised in the eastern part of the Punjab, and is spreading over fresh districts year by year. It is not altogether a useless addition to the Indian flora, as near Delhi an oil is extracted from the seeds which is used for burning, as well as in the treatment of chronic sores and eruptions.—(*Nature.*)

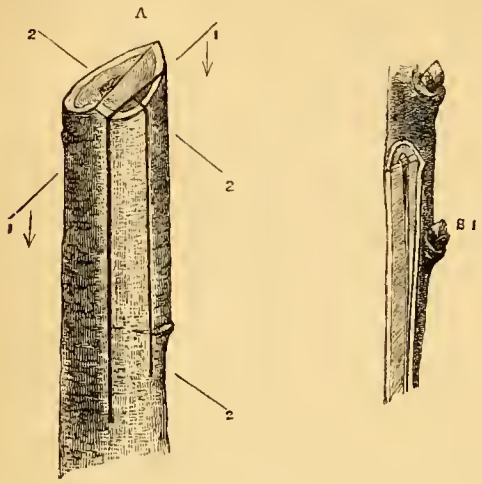
NEW MODE OF GRAFTING.

This method of grafting is a modification of the "perfected graft" of Dubreuil, and has the advantage of being easily performed when the bark of the stock will not easily run. It is especially intended for the case of the scion being small as compared with the stock.

The head of the stock is cut off by two slanting cuts, meeting in a ridge on one side of the centre, then a thin slip is cut down from the smaller half (*fig.* A, 1). This cut is made by placing the edge of the knife parallel to the ridge on the top of the stock, a little way within the junction of the bark and wood, so as to cut down a slip having a small portion of wood in it. Next by another longitudinal cut divide the slip into two nearly equal portions (*fig.* A, 2), but leaving them on the stock.

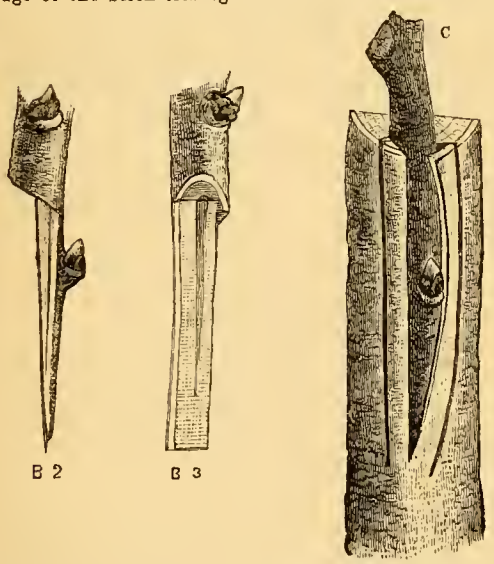
The scion is prepared as shown in the *figs.* B 1, 2, and 3. A cut is made with a long slope, so as to make the end of the

scion quite a thin wedge. Then at the thick end of this wedge a cross cut is made of the same slope as the top of the scion, and going fully half way through, and by an upward cut a slice is taken off to meet the cross cut, so making this end of the scion still thinner. Lastly, a very thin slip is cut off one



edge, as represented by *figs.* B 2 and 3. This last cut should be at a right angle to the previous one, and leave the portion of the wood exposed of the same thickness as that of the slip of the stock.

The fitting of the scion to the stock is shown in *fig.* C. The cut edge of the scion lies against the face of one-half of the



slip, and the other half of the slip is brought over the scion, and then, as usual, the whole is firmly bound together with bast, and the joint covered either with clay or grafting wax.

Like all operations of this kind, the description is most easily followed by taking a small branch and cutting it as directed. The graft is very quickly made, and it will be seen that almost the whole of the exposed liber and alburnum of the scion must meet its fellow in the stock.

In all grafting, three or four buds should be on the scion. In the figures the upper part of the scion has been suppressed; one bud will be seen to be in the centre of the slip, and one about half an inch above the top of the stock. I am quite convinced that in all cases the final leader of the young tree should be the shoot from one of these two buds. The upper ones will start first, and as soon as they have made six or seven leaves the points of these upper shoots should be nipped off, and then the shoot from either of the two lower eyes encouraged to grow as long as possible. For Apples and Pears this is not necessary, but advantageous; for stone fruits generally, absolutely necessary. Of course cut 2, *fig.* A, may be made first, and this met by thrusting the point of the knife down, so as to cut only one half of the slip; but this is not so easily done, and the knife point is very apt to get into a finger. Ease, speed, and goodness of junction are the advantages of this form of graft.—W. Kingsley.

WORK FOR THE WEEK.

KITCHEN GARDEN.

Continue the trenching of ground as it becomes vacant, and during the prevalence of dry weather keep it well forked. The young plants of *Asparagus* will now be ready for planting in beds, which it is hoped have been kept well prepared; let the roots be carefully lifted with a strong fork, and after planting give a good supply of water to settle the soil about them. Sow Early Purple and Myatt's White Cape *Broccoli*, also the Walcheren for late autumn use. Sow a full crop of *Red Beet*, if not already done. Prick out the seedling plants of the earliest-sown *Brussels Sprouts* and *Savoys*, in order to have them stocky for final planting. Draw earth well up to the most forward *Cauliflowers*, and give plentiful applications of liquid manure. Continue to prick out *Celery*; this must always be kept well supplied with water, rapid and continual growth being essential in its cultivation, if it be required large. It is found by experience that if the earliest-sown plants receive any check from drought, the chances are ten to one that they run to seed. Sow now a full crop of *Dwarf Kidney Beans* and *Scarlet Runners*, if it be preferable to sow in the open ground, instead of transplanting, as recommended. In some soils wireworms are very apt to attack the cotyledons during germination; to remedy this, after the Beans are placed in the drills, water them over with a liquid formed of one gallon of ammoniacal liquor from the gasworks, diluted with six or eight gallons of water, according to the strength of the liquor; after which let them be covered with 2 inches of charred wood or refuse, and the ground levelled over them. The charred materials appear to be peculiarly agreeable to the plants, as they become of a most luxuriant dark green, and are very prolific. Repeat the sowings of *Lettuce* of all sorts, and thin out and transplant those advancing as occasion may require. Sow a good breadth of *Turnips*, the ground for which should be well dressed with wood ashes or charred refuse.

FRUIT GARDEN.

"Do not take Nature by surprise," is an old maxim, and may be well applied to the operation of disbudding fruit trees. Severe disbudding suddenly performed causes inactivity at the roots at the very period at which Nature has ordained the reverse. If anyone doubts, let him divest any plant of nearly all its young shoots, and observe the effect. Disbudding, therefore, becomes a necessary but important operation, and if hurried through pressure of business, or neglected, evil effects will assuredly follow. See that the Peach trees are well bathed with tobacco water two evenings in succession, as soon as the crop is set. Do not wait until you see the insects, make up your mind that there are some to come, and you will not be deceived. When the trees are quite out of bloom, apply the sulphur-and-clay mixture with a painter's brush between every two shoots if possible; with two timely applications, no fear need be entertained of either the green fly or red spider for the whole summer. To form this mixture make thick clay water, add two handsful of sulphur and 2 ozs. of soft soap to each gallon, to make it adhere to the wall. When Vines have pushed sufficiently to enable us to distinguish the fruit-bearing shoots, let all superfluous ones be immediately removed. See that the soil is kept well pulverised about the roots of the trees, and that all newly-planted trees are sufficiently mulched.

FLOWER GARDEN.

It is more than probable that where much planting was intended part of it may yet remain to be executed; some kinds of evergreens may, however, yet be safely removed, taking the precautions to water them at first planting, and occasionally afterwards, to well mulch the surface, and to damp the foliage over in the evenings of dry days. These attentions, which are indispensable should dry weather occur, will enable late-planted evergreens to start in most cases freely. I have found Hollies, Portugal Laurels, Evergreen Oaks, Red Cedars, Arbor-Vitæs, &c., take root more freely now than when planted earlier in the spring, when autumn planting cannot be effected. Continue to prick out into small pots annuals raised in frames, and harden such as are established preparatory to their being turned out in the open ground. Those which have been potted some time should have another shift rather than allow them to

become stunted in their pots. Finish, if not already done, the pruning of those summer Roses which were left unpruned for the purpose of retarding their bloom. Insects, especially the green fly and rose caterpillar, will now be making their appearance in the rosery; destroy them without delay. The trees are easily cleared of the former by syringing them with weak tobacco water, the latter must be picked off and destroyed with the hand. A vigilant eye is requisite to detect them, as these pests carry on their ravages unseen. If the amateur is not certain as to the safety of his Carnations and Picotees from the attacks of wireworms, which will sometimes escape the scrutiny of the most vigilant, I would advise him to cut a Potato into four, and into each quarter a stick should be inserted. These portions of Potato should then be buried just beneath the soil. Should the pest be still lurking in the compost they will be found an unfailing trap. Top-dress the beds of Pinks with rich, well-decomposed compost. Pansies will also be the better for a similar application.

GREENHOUSE AND CONSERVATORY.

The conservatory plants are now making active growth, and should be liberally supplied with water. Those growing in prepared borders must be frequently examined to see that the roots are kept sufficiently moist. Take the opportunity of an early hour in the morning to give a good washing with the syringe or engine to everything excepting the plants in bloom. The house will then become dry and enjoyable by the forenoon; frequently clean over the borders, remove decayed leaves and flowers as they occur, let the paths, stone curbs, shelves, &c., be washed frequently, that the house may present a fresh and orderly appearance at all times. These directions should be enforced as far as possible in all plant houses. More air must now be given, and directly the nights become warmer allow a little air to remain. This low night temperature will do much to favour the growth of short-jointed wood, which in a house of this description, requiring to be frequently shaded, is difficult to obtain, and at the same time it will prolong the period of the bloom of the inmates. Hybrid Indian Rhododendrons and Chinese Azaleas will now be in great beauty, and every care should be taken to preserve the bloom from damp and drip, which materially injure them. Supply the plants liberally with water at the roots, as during their blooming season they require large quantities. Most Heaths and hardwooded plants will now either be in bloom or approaching that state. Air must now be admitted in large quantities, bearing in mind previous directions about currents of air. The great points in flowering plants are, in addition to a profuse show of bloom, clear and bright colours, and healthy foliage. The last two are indicative of good health, and, consequently, of good culture, and are always additional recommendations to a plant. Abundance of air, a well-managed system of shading, sufficient to bring up the colour of the flowers without drawing the foliage of the plant, and proper attention to watering, &c., are points in plant cultivation which are rarely taught either by calenders or books, but in which a little practice and discrimination will be necessary, to enable plants to be bloomed in the perfection we see them at the great exhibitions. Plants out of bloom should be placed where they can enjoy a rest for a short time before the new growth commences, or they break weakly. It should be remembered that when a plant flowers profusely the powers of the plant are much weakened, and a lapse of time after blooming, longer or shorter, according to the habit of the plant, is necessary to enable it to recover its wasted energies previous to forming a new growth.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

WHAT a week, not only of April showers but of April downpours! The changes in the pastures, gardens, and fields in this district are wonderful. All seemed suffering as much from dryness as we might have expected to have seen them do in the dog days. It soon became too wet to proceed with some work, but, then, there was plenty to be done under shelter; and how delightful it was to hear the rain pouring into tanks and reservoirs!

The general work has been almost a repetition of that of previous weeks' notices, such as putting in successions of Peas, Beans, Lettuces, Radishes, and Turnips, and staking Peas, where, owing to Celery trenches, it was not necessary to trample on the ground; deferring hoeing among Carrots, Onions, &c., until the ground was drier, as the rains have brought up legions of tiny weeds which a scuffle with the Dutch hoe in a sunny day will soon settle.

FRUIT GARDEN.

Pears are now opening their blooms, and a few hours of bright sun would do wonders for them and a very free bloom of Plums. We have never seen the Blackthorn so full of bloom as it is this season, and the Whitethorn seems equally promising. We have taken most of the laurel twigs from Apricot trees, but left a portion to break the force of cold winds until the fresh Apricot leaves protect the fruit that has set very thickly. But for the rains we would have given a watering with sewage to the Apricot border, as it seemed dry, and the falling of the fruit we have often traced to too much dryness of the roots. Apricot roots like a fair amount of moisture, if it is not stagnant but passes freely. Peach trees will also delight in more moisture than they often receive. The extremes of dryness and wetness at the roots are the causes of many drawbacks, and so are coldness and want of action at the roots when the branchlets are exposed to a high temperature against a wall. No wonder when the leaves become thin and sickly that hordes of insects assail them. One great advantage of sheeting in front of Apricot and Peach trees on walls is, that by keeping it on in bright days the opening of the bloom and wood buds is retarded, whilst the soil, being exposed, is gradually warmed. This warming of the soil and retarding the blossom is of quite as much importance as protecting the bloom from frost. Even in orchard houses where no heat is given, and where many things receive protection in winter by keeping the house rather close, a little retarding by shading and free air-giving in spring will often be attended with advantage. In such a case it is safest to give an impetus to growth and early ripening after the fruit is safely set and swelling freely. We gave a good watering to all fruit trees in pots, using weakened sewage water. It is about ten days since they had a watering previously. But little water will be wanted in dull weather, before the swelling of the fruit and free growth demand more moisture. Some fly has made its appearance, but in the more forward house, the fruit being well set, a good and repeated syringing with clear soft-soap water has almost put the insects out of sight. It is difficult to smoke open orchard houses.

We forget whether we mentioned that a great many of the fruit in the Peach house dropped when quite small, leaving a crop not overthick. We expected this, as all the time the trees were in bloom they scarcely had an hour of the sun altogether. These young fruit, when cut open, were all black at the core, showing a defect in the process of fertilisation. In the first orchard house the free setting could not be thicker, but will cause great trouble in thinning, and there is no sign of a fruit dropping; but then these trees had days of bright sunshine when in bloom.

Strawberries for the last eight days have missed the bright sunbeams. Even with diminished water and rather more air, the flavour cannot be so good. Melons have been trained and stopped in the mode detailed in previous volumes, but all such beds are sadly crammed with other little things at present. Our earth-pits and trenches are giving us more room under glass. There is, however, much labour involved in so much moving.

ORNAMENTAL DEPARTMENT.

Besides mowing and cleaning when suitable, we have commenced making ready the flower beds, by regulating edgings, where they are to be permanent, as all that expedites work at planting-out time. We also had the beds that are empty rough-dug again. The chief work of the week, however, has been cleaning and potting Ferns and fine-foliaged plants for corridors, &c., the great difficulty being to get light enough for them for a few weeks. Many plants succeed very well under Vines, until the shade becomes too dense, and then if not moved they will be unduly elongated.

The other chief work was getting bedding plants out of boxes into earth-pits, &c., preparatory to planting out in beds a month hence. When hard driven we have planted out of the boxes in which the plants were struck, but they seldom did so well, or took root at once so freely, or made such a quick display as when we gave them this intermediate treatment, and lifted them with less or more of a ball attached, the fresh roots ready to go at once into the pulverised soil of the beds. The labour is thus increased, but we think the results pay well for it. It is astonishing what a month of more room will do for such plants, if they are protected from frost and cutting east winds.

We also put in our last batch of Coleus and Iresine, as we think then we shall have enough to use them freely, and cuttings now will form fine plants six weeks hence. Few plants beat the Coleus for colour, but to have it good the plants must be well-established and not turned out until the first or second week in June. We have prepared a place under glass to receive some hundreds of potted plants. We shall most likely plant a large number out in a bed under glass, as both Coleus and Iresines make plenty of fibrous bushy roots, and, therefore, will lift well. The great inducement to us to turn out bedding plants in beds, turf-pits, &c., is, that with the exception of the first watering at planting, the plants rarely need any more until they are lifted and taken to the beds. In pots, the watering must be frequent.—R. F.

TRADE CATALOGUE RECEIVED.

George White, 3, Moss Street, Paisley.—*Catalogue of Florists' Flowers, Greenhouse, Herbaceous, and Bedding-out Plants.*

TO CORRESPONDENTS.

Hedaroma tulipifera (*Hedaroma*).—This is now called Genetyllis tulipifera. It is of the natural order Myrtaceæ.

Pine Apple Culture (*Ten-years Reader*).—As you need instruction on the entire management, you had better buy "The Pine Apple Manual." You can have it free by post if you enclose thirty-two postage stamps with your address.

Cordyline heliconifolia (*East Sussex*).—This is one of the many synonymes of Cordyline terminalis. It is a native of Ceylon. The flowers are white. In "The Botanical Register," pl. 1749, it is portraited and described under the name of Draceæna terminalis, or Sandwich Island Tee Plant. There is a long description of it there, and in Ellis's "Polynesian Researches."

Gillyflower (*G. C.*).—Although this name is now usually confined to species of the genus Matthiola, yet it is sometimes now, and was commonly by the old herbalists, applied to species of Dianthus.

Cineraria Culture (*A Lady, Cardiganshire*).—A communication in last week's Journal probably contains the information you need. If not, write again, and state the directions you need; we shall readily reply.

Rose Grubs—Maréchal Niel (*Howarth Ashton*).—The grubs are most probably one of the Rose weevils. There is hardly any way of getting rid of them except handpicking, but syringing with soft soap and tobacco water will greatly help to keep them in check. The strong shoots of Maréchal Niel have probably been injured by the same grub. If the shoots are cut off it will most likely be found that one of the weevils has eaten down the centre of them. We have seen them eat as far as 5 or 6 inches down the centre of the shoot, and whenever the top leaf turns black it will generally be found that a grub has attacked it. We cannot account for the Maréchal Niel not doing so well this year as last, unless the roots have gone too deep, and into a subsoil that does not suit it. We should advise surface-dressings to encourage the roots to keep to the surface.

Roses for Pots (*M. H. B. L.*).—*Twenty-four for Pot Culture:* Alfred Colomb, Antoine Ducher, Charles Lefebvre, Comtesse de Chabrillant, François Louvat, John Hopper, Jules Margottin, Madame Victor Verdier, Marguerite de St. Amand, Monsieur Woolfield, Madame la Baronne de Rothschild, Monsieur Noman, Senateur Vaisse, Victor Verdier, Marquise de Castellane, Elie Morel, Marquise de Mortemart, Berthe Baron, Souvenir d'un Ami, Madame Willermoz, La Boule d'Or, Adrieone Christophle, Gloire de Dijon, Marie Sisley. *Twenty-four for Out-door Planting:* Alfred Colomb, Annie Wood, Charles Lefebvre, Duke of Edinburgh, Horace Vernet, La Duchesse de Morny, Madame Caillat, Mdlle. Bonnaire, Marie Baumann, Monsieur Noman, Pierre Notting, Princess Mary of Cambridge, Abel Grand, Baroness Rothschild, Dr. Andry, Elie Morel, John Hopper, Lord Macaulay, Madame Clémence Joigneaux, Marguerite de St. Amand, Mdlle. Marie Rady, Monsieur Woolfield, Senateur Vaisse, Xavier Olibo. *Climbers:* Gloire de Dijon, Céline Forestier, Climbing Devoniensis, Maréchal Niel, Triomphe de Rennes, Solfaterre. The above, except Gloire de Dijon, are tender, and require a wall. *Standards—Summer Roses:* Charles Lawson, Coupe d'Hébé, Juno, Paul Perras, Paul Ricaut. *Hardy Hybrid Perpetuals:* Baronne Prévost, John Hopper, Madame Charles Crapelet, Victor Verdier, Général Jacqueminot, Antoine Ducher, Vicomte Vigier, William Griffiths. *Bourbons as Standards:* Baron Gonella, Louise Margottin, Michel Bonnet, Baronne de Noirmont, Louise Odier, Modèle de Perfection.

Camellia Repotting (*Valtevareda*).—Your plant now in flower and in growth we would not repot until the growth is complete—about June; and we would not pot then if the plant is not in a very small pot, but leave it until next spring, and then pot before it begins to grow, irrespective of the flowering. The Camellia is best potted just before it begins to make fresh growth. All pottings afterwards should be confined to shifting into larger pots without disturbing the ball.

Daphne indica Treatment (*E. S.*).—Repot the plant now, and do not give a large shift, but remove any loose soil, and repot in as small a pot as you can. Provide good drainage. A compost of two parts sandy peat, one part leaf soil, one part turfy loam, with a free admixture of sharp sand, will grow it well. If leggy, it may be cut down, and in this case you must not repot until the new shoots are 2 inches long. Continue it in heat until the growth is made, and then remove it to a cold pit, or any cool, airy house. To flower, it requires a temperature of 45° in winter. The main point is to have the wood well ripened.

Tree Mignonette Management (*Idem*).—For flowering throughout the winter, or say from September to May, we sow now; indeed, the plants are just up, and when large enough to handle they are potted off in 3-inch pots and placed in a cold frame. Here they remain with the lights off in mild weather, and when the pots are full of roots the plants are shifted into 4½-inch pots and plunged out of doors in an open situation, affording the plants lenty of room. They have a neat painted stick, about 18 inches high, placed to each, so as to keep them erect, and to that they are tied as required. When they show flowers these are pinched off, and repeatedly through the summer. They are shifted into 6-inch pots in June, and are put into 9-inch pots at the close of July. Beyond picking off the flowers they receive no training, and we have them pyramids from 18 inches to 2 feet high by the close of September, and they bloom all the winter in a temperature of 40° to 45°; indeed, they are now in fine flower, and will be so until plants in the open ground come in. The main point is not to allow any great development of flower, but cut it as we do by the handful nearly every day from September to June, as soon as it is sufficiently developed. If the plants are allowed to develope a large amount of flower they soon become poor. A compost of light turfy loam two parts, one part sandy peat, and one part old cow dung or leaf soil, with a half part of charcoal in pieces varying from the size of a pea to that of a walnut, will grow them well, adding sand liberally. Good drainage is necessary. Sprinkle them overhead every evening in summer, and every morning in winter, and water so as to keep the soil moist. The kind we grow is Reseda odorata meliorata. It is of vigorous growth, and has fine flowers of an orange red colour.

Weak Growths of Asparagus (*Amateur*).—We think it best to cut the weak as well as the strong shoots, for we find it tends to make the strong shoots push more surely, and earlier than they do when the weak shoots are left. We cut all until the end of May, and then allow two or three shoots to rise from each crown, depending for cuttings on those that rise over that number. Some let the weak shoots grow, cutting only the strong, which is also a good plan, especially when the beds are thin of plants and the growth weak. We have, however, so few small heads, from the circumstance that we thin out all the weak shoots in the previous year, that they would not be worth leaving; but if our beds in general produced small heads we should leave them, cutting only those fit for table. Late-continued cutting is ruin to Asparagus.

Peaches Falling (*Idem*).—We should give the trees a good watering the first dry weather after May, not a dribble, but a good soaking, and mulch the border with short manure. A good watering should be given every fortnight, or every week if the weather be very dry and hot, up to the fruit commencing ripening, and then discontinue it. Every evening during dry, hot weather the trees should be syringed, commencing in June, and continuing until the fruit begins to ripen. In moist weather the syringing and watering will not, of course, be required.

Vine Border Uncovering (*Idem*).—The removal of the material is dependant on the state of the Vines. If forcing was commenced in January, or earlier, the heating materials ought not to be removed until the end of May or beginning of June; but if the material be confined to a covering of litter, the earlier it is removed after April the better.

Vines (*J. O. N.*).—We think that you have done right in promoting growth the first year so as to encourage roots, and also in cutting well back the first season. Why not continue such a good system? We, therefore, would not at first stop the leading shoots, nor yet the laterals, so short as you propose. You will thus, no doubt, earlier ripen the wood, but you will diminish strength and lessen root action. We should say, let your leading shoot grow 2 or 3 feet longer than you have to prune back to next season. When you stop it let the lateral grow a foot or two, or more, without stopping, and instead of stumping-in the side laterals allow them to grow a joint or two without stopping at first. That will add to the strength of the rod. About July begin to shorten them back, and provided the laterals at the point of the stopped shoot are running by August and September, remove all the laterals downwards on the shoots, so that the sun may play on the large bud at each leaf, and thus wood and bud be ripened. Your proposed plan of short-stopping in this, the second year, is liable to be attended with two drawbacks—first, the growth will be diminished, and secondly, there is a danger that from so much early close pinching you will induce the buds intended for next season to break prematurely this season. As to your Vine border for next season, depend chiefly on your fine fibrous sods. Your horse droppings to be used safely should be kept dry and mixed with enough of quicklime to destroy all fungus. Then to a cartload of the fibrous sods mellowed and sweetened, you may add a couple of bushels of your charcoal, the same of lime rubbish, the same of the sweetened horse droppings, and about one bushel of the half-inch bones. We would have nothing to do with ashes from wood, decayed weeds, and other garden rubbish, nor yet would we use soot in the compost. Good loam, lime rubbish, and a little charcoal, and more bones than stated above, would answer well for Vines, and you could add dung as a top-dressing, or mulching, removing it and adding fresh every year. Soot, and weeds, and wood ashes, &c., all tend to make a greasy unctuous mass, in which the roots ere long refuse to thrive.

Vine Management the First Year (1852).—We presume your Vines, planted last December, were pruned to the bottom of the rafters, or to where you wish for side shoots. As they are now pushing freely you will take the shoot from the uppermost eye straight up, not stopping it at all until it is within a foot of the extent you ultimately wish, and then pinch out its point. This cane will put out laterals, which we would stop at the first joint, and then allow any further growths to be made at will, except on half the upper part of the cane; the laterals there we would keep pinched back to one joint. If the Vines are strong you may have two or four side shoots in addition to the principal cane, but if they are not strong do not allow them to grow unless you require side shoots below the point to which you pruned in winter; then you must leave them at every 9 inches, but on opposite sides of the rod, so that they will be 18 inches apart on each side. Allow them to grow until they show fruit; if not fruiting they will have tendrils at the fifth or sixth joint, and at that take out the point of the shoots, or if fruiting at one joint beyond the bunch, and stop all laterals from these shoots at the first leaf, and stop to that afterwards throughout the season. All buds or shoots other than those mentioned should be rubbed off.

Chrysanthemums Stopping (*W. X. Y.*).—Take out the point of the plants from cuttings when 6 inches high, and stop them again early in June and about the middle of July.

Mignonette in Pots for Exhibition in July (*A. R.*).—We presume by four pots that four plants only are meant, one in each pot; but as you say there is no limit to number of plants nor size of pots we should have three plants, and for so early as July grow them in 9-inch pots. Sow in March in gentle heat, and when up remove to a house with a temperature of 50°.

Pot them when large enough to handle singly in 3-inch pots, and place them in the same structure, keeping them near the glass, and watering as required, sprinkling overhead morning and evening. When the pots are filled with roots transfer them to pots a size larger, and early in June put three in a 9-inch pot, place in a cold pit, drawing off the lights after a few days, and use them only during heavy rains or high winds. Pick off all the flowers, but not later than the first week of June—*i. e.*, remove all the flowers at that time. We know what a good specimen Mignonette is, but no one can tell what is a good pet of it, for a plant in a 6-inch pot may be a mass of flowers and have good foliage; or it may be in a 9-inch or 11-inch pot, and still be fine as regards size, habit, good foliage, and profusion of bloom, and a good bush may be formed by perhaps half a dozen plants in the like size of pot. It is not possible to tell what is meant in the schedules of some exhibitions

Grass under Beech Trees (*M. E. K.*).—There are but two Grasses that do with us under Beech trees—Festuca duriuscula (Hard Fescue), and Poa nemoralis (Wood Meadow Grass), or its variety Poa nemoralis sempervirens. These do well with us under some very large Beech trees, but it is an open grove. If very closely shaded we question whether anything would serve you so well as Ivy. We should, however, try the Grasses named. We have found Vinca minor (Lesser Periwinkle) also do well.

Transplanting Box Trees (*Idem*).—We have this spring planted five hundred of the sizes you name (4 and 5 feet high), and no plants that we knew move with greater safety, as they have each good balls; but if they have not, the ground must be very loose, or they have been grown very closely together for a long time. The main point is to move with plenty of root, give a good watering at planting, and as occasion requires afterwards up to July. Trees of the size you name are very valuable, especially for planting under trees, than which nothing does better.

Nut Trees Pruning (*Idem*).—The old branches being very long, and bearing not very abundantly, we would cut them away and encourage those from the bottom; do not encourage all, but thin away the weakest and where they are too thick. Three or four good branches are sufficient, and they may be multiplied to any extent by shortening them. It is bad practice, however, to encourage crowding. Have all the branches, if possible, starting from above the surface, and remove all suckers as they appear.

Cucumbers Impregnating (*Curator*).—It is not necessary to fertilise Cucumber flowers to have fruit in the best condition for table; the flowers impregnated produce fruit with seeds, and when these much prevail in a fruit it is of no use for table. We never impregnate the flowers of these fruits we require for cutting, and we consider it well to remove the male flowers as they expand. The fruit will swell quite as well without them. Indeed fertilising Cucumber flowers is not practised by gardeners except to produce seed of any kinds they require. One seeding Cucumber impoverishes the plant more than a score of seedless ones.

Discoloration of Leaves by Syringing (*Idem*).—It is entirely owing to the water. Clear soft or rain water leaves no sediment on the leaves, nor does any kind of water after it has been in an open tank a few days and used clear.

Apricot Leaves Curling (*H. G. M.*).—It is caused by a small yellowish green caterpillar, that does great injury to the foliage by feeding on it and tying the leaves together for a habitation. After a time, or when at its full size, it fastens together fragments of leaves and changes to a brown pupa, from which the perfect insect emerges in July. There is no remedy so good as hand-picking, giving all the curled leaves a squeeze between the finger and thumb, and this should be practised up to July A syringing with tobacco water, that of the shops being diluted with six times its volume of water, will also destroy all it touches; but they are so screened from attack by the curled leaves, that hand-picking and squeezing are by far the best riddance. The caterpillars are the larvæ of a small moth, Ditula angustiorana.

Geraniums not Rooting (*H. H. R.*).—The cuttings put in last autumn and potted-off singly in March, we think have not rooted owing to the check given in potting, the weather not being very favourable. If you could give them a gentle bottom heat, in a frame on a dung bed for a fortnight or three weeks, we have no doubt they would root well in that time. They will, however, root in a greenhouse, but then do not give too much water, but keep them moderately moist, sprinkling overhead rather than making the soil very wet by frequent watering at the roots.

Hæmanthus coccineus to Flower in August (*An Amateur*).—You do not say in what condition the plant is at present, but we presume it is growing freely or has made a good growth, and in that case you will need to give water and afford a light airy position up to June, then withhold water and place the plant in a warm situation in a greenhouse, and in July place it out of doors—that is, if you do not wish for flowers until the end of August—for three weeks; then place it in a hotbed at 70°, and it may start for flower, and you can remove it to a greenhouse, or continue it in heat so as to time the flowering as you require. If you want flowers early in August, then you will place it in the hotbed early in July, but if it show by that time you may need to retard the flowering by keeping it under a north wall. Thunbergia alata would not be admissible as a stove or a greenhouse plant. We fear it would not tell, though a good specimen is very fine. Lomaria gibba can be shown in a collection of six exotic Ferns. It is from New Caledonia.

Plant for Near a Pond (*Duckery*).—In the well-raised bed in a low situation, stagnant water absent, we would have Pampas Grass in place of the Tritoma Uvaria killed by frost.

Triteleia uniflora Treatment (*Idem*).—It is a pretty bulbous plant with delicate lilac flowers in spring, and is very valuable for the decoration of borders. The bulbs require to be planted in September or October where they are to flower, 1½ to 2 inches deep, and in severe weather should be covered with partially-decayed leaves about an inch deep, the soil being of a sandy nature, and well drained. Or they may be potted six or eight in a 6-inch pot, in a compost of sandy loam, peat, and leaf soil, and be protected in a cold pit or frame, the pots being plunged, and a covering of mats placed over the lights in severe weather, hardening-off in spring before planting out.

Plants for Winter Flowering (*A Young Beginner*).—We name some both of stove and greenhouse kinds, for both of which we apprehend you have convenience. Anthurium Scherzerianum, Ardisia crispa elegans for its berries; Begonia fuchsioides, Iugrami, insignis, cricta multiflora; Burchellia capensis, Dalechampia Roezliana rosea, Eranthemum pulchellum, Franciscea confertiflora, F. calycina major; Gardenia citriodora, Gesnera exoniensis, Monochætum ensiferum, Pentas carnea, Poinsettia pulcherrima, Epiphyllums, and Thyrsacanthus rutilans. These are stove plants. Of greenhouse plants:—Acacia armata, A. oleifolia elegans, A. pulchella, A. Drummondi; Azalea amœna, and Fielder's White, Camellias, Coronilla glauca, Correa Brilliant and Harrisi, Cyclamen persicum, Cytisus racemosus, Erica hyemalis, Epacrises, Libonia floribunda, and forced plants as Dielytra spectabilis, Deutzia gracilis, Spiræa japonica, Lily of the Valley, and Primulas.

Edible Fungus (*Mrs. C.*).—The fields, you say, are full of the Coprinus comatus, which is usually an autumn fungus, and you ask, Is it perfectly wholesome at this season? In reply we quote from the volume published at our office, entitled "Selection of Eatable Fungi." In that is a coloured portrait of Coprinus comatus, the Maned Agaric, which might enable you to be assured that the fungus you speak of is Coprinus comatus! It is there stated, "The Maned Mushroom is frequently found in waste and grassy places, lawns, meadows, and hedgebanks during spring, summer, and autumn. If gathered when young this is one of the most delicious of all the edible fungi. Dr. Badham recommends it for ketchup."

Terrace Garden (*A Subscriber*).—The arrangement will look very well, but you will observe that 1, 1, and 2 in a line will have light margins. A slate-coloured Verbena, or even a dwarf yellow Calceolaria, would make a better margin for 2, or even a ring of yellowish-leaved Geranium. 3, 3, Calceolaria, we would margin with purple or blue. 4, 4, could not be beaten; ditto 5, 5. 6 we would like to alter so far as to put purple Verbena or Iresine Lindeni next Christine; and 7, Ageratum, we would border with yellow or scarlet instead of purple.

Melon Culture (*C. A. W.*).—If you enclose five postage stamps with your address, and order the "Kitchen-Garden Manual," it will be sent to you by post It contains what you need.

Pansy Culture (*W. R. M.*).—In "Florists' Flowers for the Many" are full details. You can have it by post if you enclose five postage stamps with your address.

White Violets (*Lincolnshire Vicar*).—They are only a variety of the common purple Viola odorata. We have no doubt that this occasionally sports into white flowers, especially on chalky soils.

Pears (*An Amateur*).—Pitmaston Duchess is a very superior Pear and sets well. Beurré de l'Assomption is also excellent. They do well in pots in the orchard house. We know nothing either for or against the others you name.

Planting Hops to Cover an Arbour (*Arthenice*).—Although it is now late to plant the Hop for the purpose you mention, yet it may be done if you can obtain a good plant in a pot, but to take one up from the ground will be attended with loss to it that it will hardly recover during the season. Many of the shoots of Hops are now 6 feet high, but with care in warding off all attacks of insects, and shading the plant for a few days from very bright sun, it is likely you may yet succeed, but a month or six weeks sooner would have been better.

Allowing Tricolor Geraniums to Flower (*Idem*).—This is a mere matter of taste When planted in quantity so as to form a feature in the flower garden, we usually pick off the flowers, but with single plants dotted about amongst others we usually let them flower. We do not think the persistent removal of flower buds as they appear assists the plant in its growth, for it will make an effort to produce more. If your object is to increase the growth of a particular kind, better let one or two flower trusses remain, and remove the rest, also cut off all seed stems.

White Spot on Orchard-house Peaches (*Rus in Urbe*).—We are afraid that the young fruit of Peaches and Nectarines are infested with mildew, and this often seizes the fruit, when, as in your case, the foliage is free from it. Your remedy is to dust the parts with flowers of sulphur, and afford more free ventilation. As the fruit in the orchard house are so large, we should imagine that the atmosphere has been rather too close, and that there has been either too much or too little moisture at the roots. Whilst the sulphur is on the fruit shade slightly. It would also be well to daub any open parts of the wall with sulphur paint. We often use strong soft-soap water for mixing the sulphur, as then it adheres better to the wall. The sulphur should first be beaten-up with a little water into a thick paste, otherwise you will not easily mix it with water. The fruit affected should be dusted with something like a fine pepper-box.

Flower Garden (*D. R.*).—We think your mode of planting will look very well. However, as you, no doubt, want us to amend it, if we cannot find a fault, we should say that simplicity would improve it. Your centre, No. 1, cannot be improved, and you have done well in crossing 2, 2, and 3, 3, but we should prefer to make them all alike, just as you have done with 7, 7, and 8, 8. We are more inclined to say this, because, unless the Variegated Geraniums, &c, in 2, 2, are very strong, you must nip the Perilla edging closely. Then as respects 3, 3, the edging of Golden Feather will not suit so well with the Pink Christine Geranium as some other things. Supposing you bordered the 4 beds with the Golden Pyrethrum, and then filled alone with Perilla and the Variegated or pink Geranium. One improvement here would be to substitute Iresine Lindeni for Perilla, the leaves are so much smaller and of a fine deep purple, and would need but little pinching in comparison. The Iresine Herbstii would be better than Perilla, but Perilla will do well if you use small plants, and pinch well-in, and yet leave small young shoots with small leaves. Then, as you edge all these beds, we would edge also the whole of the rest, Madame Vaucher with purple, the scarlets with white, the purples with yellow, and then let those who would beat you look out.

Peach Trees in Peach House (*W. B.*).—The Peach leaves seem as if they were thin and suffering from want of root nourishment, but if growing inside the house they would not be so apt to suffer from Elm-tree roots. From the latter you can have no remedy, except trenching down beyond the roots, and either leaving the trench open or making a cement wall, through which the roots cannot pass—a difficult affair unless you go deep enough. We do not think that is the sole cause, or even the principal one. We observe on the leaves spots and scalds, which are generally the results of two causes—first, deficient early ventilation; and second, which without further information we think has much to do in your case, scars and spots in the glass, which act as so many burning lenses. By carefully examining the glass you can satisfy yourself as to this, and can daub each scar with a little paint. If not, the roots are at fault.

Flower-garden Planting (*Hazelhurst*).—We think we commended your flower garden long ago for its ease, gracefulness, and simplicity·

Nothing can be simpler than the mode of planting the central group. We are a little confused as to the numbering, as we cannot find No. 6; but we presume it must have been intended as a couple of the four of No. 5. Here we would like you to remark, that in the twelve clumps in a circular form there are just three fours that are planted alike, and if every one of these twelve beds round the central fountain had been planted differently, there would not have been the tithe of satisfaction derived that there will be from the balancing of three distinct modes of planting. We are not quite sure as to all the beds being edged with Cerastium, but if they are, then we would like a double edging inside for some of them, such as blue for yellow, and purple for pink, &c. Then of the four 10's in a parallelogram shape, we prefer those with the diagonal lines across done with Coleus Verschaffelti, and the angles, or triangles rather, filled with Flower of the Spring and Mrs. Pollock Geraniums, with a slight line of blue inside the Cerastium edging. Of all the pretty Coleuses, the only one we have met with to be depended on for out-door work is Celeus Verschaffelti, and we have made many trials of whites and yellows to group with and show off its rich colours. Let us here note, for the benefit of our correspondent and our readers, that Mr. Alexander McKay, jun., of Woburn Abbey, has, so far as we are aware, beaten us all in finding the richest harmonious contrast for the Coleus. The single large bed of the Coleus at Woburn last year was edged with a double row of the Polemonium cæruleum variegatum, and we can only say that that single bed has been a thing to think and dream about ever since. The next best planting of that bed at Woburn was when it was surrounded with a fine uniform belt of rather old white plants of Cineraria maritima. We planted out much more of the Coleus than Mr. McKay. We know of places where, perhaps, ten times the number of plants were put in, and all were admired in the various combinations, but this Polemonium, with its shades of green, white, and yellow, and the cut artistic form of its leaves, seemed just fitted for the rich crimson of the Coleus. We should be glad to hear of a better edging. We say to the possessor of this fine garden at Hazelhurst, and to our readers generally, Try at least a small bed if you can, and report to us the result. We mean to try ourselves, and we trust our plants will be strong before planting-out time. We are ever glad to imitate when it is not given to us to originate. The four 8's will look well—Golden Feather Pyrethrum, Lobelia speciosa, Calceolaria amplexicaulis; only the Calceolaria, if grown strong, will be out of all proportion to the Lobelia. Iresine Lindeni and Herbstii, or a line of Purple Verbena, would be better, or a line of the Imperial Dwarf Ageratum. The four large beds of Stella Geranium should also have something to tone them down in height to the Cerastium edging. But we know we have said enough. We are alluding to plants grown strong. If the Geranium plants are small, then our objections do not apply; but for ourselves we like to see growth as well as bloom, and to have the ground wholly concealed when the beds are at their best.

Edging for a Border (*A Cottage Gardener*).—As an edging inside Box, Cerastium tomentosum makes a good and permanent line, enduring three years and more without requiring to be renewed. All it requires is cutting occasionally to its proper limits, and in autumn we cut ours to a width of about 4 inches, and it grows remarkably well, and would flower well in May and June; but we cut it close down early in May, and it makes nice spray by the time bedding plants are put out.

Twelve Select Evergreen and Variegated Shrubs (*Idem*).—The following all bear cutting well, and may be kept of the height you require—3 or 4 feet:—Laurustinus, Aucuba japonica maculata (old Aucuba), A. japonica limbata (if you had a male plant they would produce berries), Buxus arborescens marginatus argenteus and B. arborescens marginatus aureus, Ilex Hodginsi, Gold-edged Holly, Silver-edged Holly, Taxus adpressa, T. elegantissima, Rhamnus angustifolius variegatus, and R. latifolius maculatus. For our own part we would have Laurustinus, Gold and Silver-edged tree Box, Hedgins's Holly, and Gold and Silver-variegated Holly, two of each. They would need to be cut-in every year before they began to grow.

Weeding Mulched Border (*Idem*).—We should not do more than turn the mulching over with a fork, or go over it in dry weather with a Dutch hoe, leaving the litter light, and in either case they would be dried up. If they are tap-rooted weeds that are pushing through the litter from the soil, you will of course need to fork them out, removing the litter, and when the border is cleaned replace the litter.

Water-cresses in a Garden Border (*H. Leeworthy*).—Planting must be done in September, in a moist, shady border. Plant slips, and the only cultivation necessary is to dig the earth fine, to draw a slight trench with a hoe, to fill this with water until it becomes a mud, to cover it about an inch deep with drift sand, and then to stick in the slips about six inches apart, watering them until established. The sand keeps the plants clean. They will be ready for gathering from in a very few weeks, and the shoots should be invariably cut, and not picked.

Stopping Daphne indica rubra Shoots (*H. N. O.*).—You are, no doubt, aware that the flowers are produced from the points of the shoots, and if you remove them as you must do in stopping, the plant will not flower next year unless it make fresh shoots, which it is not likely to do, as those of the current year are already 5 inches long. Whatever pruning this plant requires should be done before it begins to grow.

Tritoma Uvaria grandiflora Seeds Failing (*Idem*).—The seeds enclosed to us appear to be sound. We think if you were to place the pots in a hotbed of 70° to 75° the seeds would soon vegetate. No particular treatment is required, only sow in well-drained pots or pans, and in a compost of two parts peat, one part turfy loam, and one part leaf soil, with a free admixture of sharp sand, having the surface fine, and just covering with fine soil. Keep the soil moist, and when the seedlings are fairly up harden them off, remove them to a greenhouse, and when large enough to handle pot them off singly, and place them in a cold frame.

Grubs in Soil (*Idem*).—From your description we should say they are millipedes which infest your soil. They feed on decaying vegetable matter, but we do not know that they do any great injury to vegetable crops. They are very plentiful in ground which has been heavily manured, and long cropped with vegetables. A dressing of lime is very useful, both in driving them away and for improving that description of ground. A dressing of gas lime will in most cases drive them away. The gas lime should be applied some time before the ground is intended to be cropped.

Coleus Propagation (*Idem*).—The Coleus is of very easy culture, but cannot well be wintered in a less temperature than 50°. The plants require as a rule about 10° more heat than Pelargoniums. The points of the shoots, taken off when about 3 inches long, strike freely if inserted in sandy soil and placed in a gentle heat. They strike even more freely than bedding Geraniums. We winter ours in a cool stove; they are beautiful all the winter, and afford us an abundance of cuttings in spring.

Heading-down Hollies (*A. B.*).—Now is the best time in the whole year for cutting back Hollies and all evergreen shrubs ill-shaped or overgrown. You may cut them back to any extent, but leave enough of small branches for making fresh shoots. The branches left need not have leaves, and may be cut in as much as you wish. The best evergreen tree for shelter is Austrian Pine. It stands the sea breeze well, and resists strong westerly blasts better than any other. The Corsican Pine, however, resists them well, grows as straight as an arrow, and makes double the growth of the Austrian Pine. It is very desirable where quick growth is required, and yet, not having so dense a habit as the Austrian Pine, we prefer the latter, but where practicable we would have both. We should plant the Austrian Pine outside, and the Corsican Pine in the internal lines; indeed, we have some screens of these kinds that are succeeding excellently. On limestone soil inclined to swampiness we have seen Norway Spruce thriving. Pinus maritima would probably suit.

Fastening Dried Ferns (*E. J.*).—The best mode of attaching them to the leaves of a book is by small straps of green paper passed over the stem and gummed to the paper by their ends by a solution of gum tragacanth. You can have The Journal of Horticulture from our office in the way you mention.

Shamrock (*J. W. Breton*).—No one knows what plant St. Patrick held up as an illustration of the Trinity. It is a mere legend that he used any such illustration. Consequently, whether the plant you enclose, Oxalis corniculata, is "the true Shamrock," cannot be told.

Insects on Grape Vine Buds (*R. B.*).—The insect sent (Otiorhynchus sulcatus) is decidedly an enemy to the Grape Vine, gnawing off the young buds. Search for them after dark, previously spreading a white cloth beneath the tree, upon which they will fall, and are easily seen.—I. O. W.

Names of Fruits (*John J. Harpur*).—The small conical Apple is Coe's Golden Drop, and the round one appears to be Wyken Pippin.

POULTRY, BEE, AND PIGEON CHRONICLE.

A DRAKE-DUCK.

The following is in reply to "R. W.":—

We think Pope says, "First, follow nature;" he was perfectly right. There is a penalty if we do not, and the penalty is inevitable. As soon as a capon is really made, and the bird has had the good fortune to be the subject of a masterly operator, the combs and gills have been removed; all signs of vitality have disappeared; the comb is not reproduced; the gills are things of the past; the tail loses its sickles; the hackles and saddles diminish; and the once "gallant" now "capers nimbly in a lady's chamber," hoping to sit on the eggs her ladyship will leave. This is because we have not followed nature.

The capon is a careful and diligent nurse. It is "extant in choice Italian" that most of the Italian chickens are reared by capons. We can vouch from our own experience that the authentic capon is a diligent watcher of hens when they are laying, that he may have the pleasure of sitting on the eggs. Most of our readers will be familiar with the real hybrid, the cross between the fowl and Pheasant. Although sex is denied to these birds, yet there is sufficient difference in them to make even the ignorant in such matters say at a first sight, "That is a cock, this is a hen." We once had many running and flying about. We also kept common fowls. We kept them as nearly as possible *ferce naturæ*. They roosted in trees; they laid in baskets nailed to a wall. The "male" hybrid would sit on a bough watching a hen that was going to lay, and when she got on the edge of the basket, and gave audible notes of joy at having produced an egg, he would immediately fly from his perch, slip behind the hen, and, ruffling his feathers, spread himself over one egg, as though it were necessary he should cover "a long score." When he was removed from his charge he clung to it with the same pertinacity, and, force being used, there was as much "cussing and swearing" as there would have been from one who had laid fifteen and sat on them all. Few poulardes were ever made in England. We are not naturally fond of these eccentricities. *Esto perpetua.*

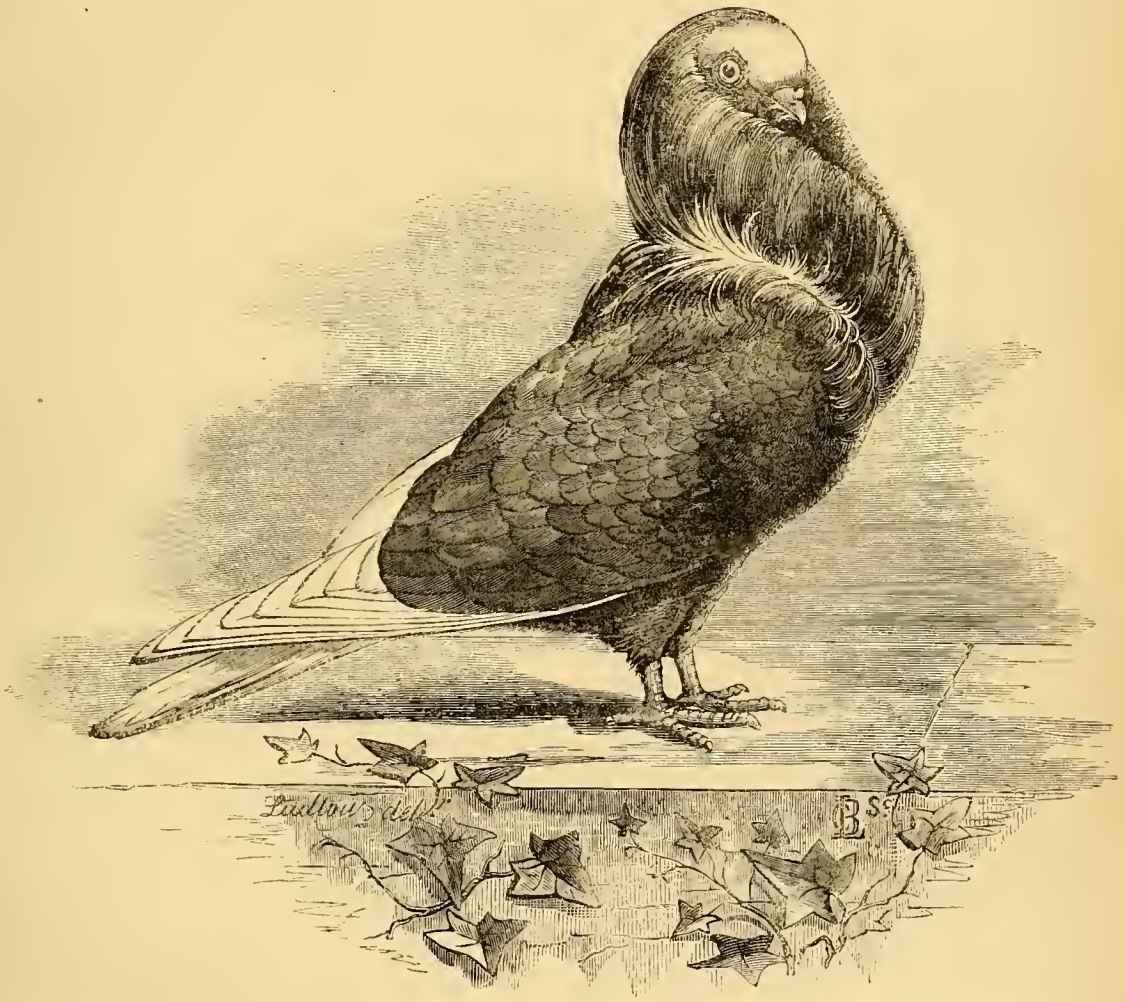
When a poularde is made by removing the egg-laying organs at their first development, the meek blushing pullet, that was only anxious to increase the number of the fowls that be, becomes an incipient matador. The pendant comb becomes erect; the round tail narrows, lengthens, and curves at the extremities; the hackle and saddle grow; the spurs lengthen day by day, and, *horribile dictu!* the pullet crows. To the best of *her* ability she becomes *he*. It may be said "Sarve you right, leave the sexes alone." Granted.

It is said accidents will happen in the best-regulated families. A man may legitimately get a black eye without being engaged in a disreputable squabble by gaslight. Let us discourse. Such of our readers as shoot will know that sometimes a hen-cock is killed. Well, where the dimensions of the bag permit,

it is spread out before the shooters at luncheon time, and, if there is a hen-cock, what a number of opinions! The old school recitation of the Chameleon is nothing to it. One says she never lays; another says she lays but does not sit; the third says she is among Pheasants what the Cuckoo is among small birds; the last says she is a hen that, failing to find a mate, turned cock in self-defence. Mr. Yarrell and the writer of this made the first dissection of a hen-cock; the egg-organs were ruptured, the bowels were saturated with yolk, and hence the change. The truth is, when the propensities of one sex are tampered with and destroyed, accidentally or not, they are replaced by the opposite one. This is the history of your Duck.

THE JACOBIN.

We now submit a few observations on the Jacobin, or, as it is more commonly termed in the fancy, "the Jack." We shall endeavour to be concise, in order that our remarks may be the more readily comprehended by the uninitiated and the young fanciers, for whose enlightenment we are mainly striving, and that they may be the means, we hope, of extending the cultivation of this interesting variety. We shall not attempt to deal with the questions of its origin and the manner in



which its most striking characteristics have been produced—namely, the hood and chain, which impart to it such a peculiar and monk-like appearance.

Taking it as an acknowledged fact that the Rock Dove is the common ancestor of all our domestic Pigeons, we can only express our admiration at the result of the exertions of the fanciers of bygone days, who, by perseverance and careful selection, have produced this among the many unique varieties we now possess, feeling grateful to them for what they have done, and hoping that such evidences of zeal and enthusiasm in the past may be emulated now and in the future, and towards no variety is this spirit more wanting than towards the variety to which we are now directing attention.

Our portrait is that of a Red hen of great merit, fully testified by the many successes she has achieved in the show pen.

The points of the breed are as follow:—A round head and a short spindle bill, or what a fancier would term short-faced. The eye should be white, or pearl as it is generally called, entirely free from blotches, and be surrounded by a small red cere or lash. An orange eye is highly detrimental. The hood should be well developed, and lie flat on the top of the head, the frill or chain projecting from it being of such a length that when the bird is in "carriage" the eye is nearly hidden by it, and it should meet in front of the chest so closely as to appear to overlap, and the lower it extends the better. The hood, frill, body, and thighs should be of one uniform colour, whether black, yellow, or red, the ten flight feathers of each wing and the tail being white; and as respects the former point, the white should not extend below the bill. In size the bird should be small, with a light and erect carriage, and neat coral legs and feet.

The colours we place in the following order:—Black, Red, Yellow, and Blue, the first three being as rich and sound as possible. The Blues should correspond to the foregoing remarks, with the exception of the black bar peculiar to al blue Pigeons. We have heard from our late Hon. Secretary

that a few years ago such birds were plentiful in Belgium and Germany, and we occasionally hear of them now; but as they seldom or never make their appearance at our exhibitions, we conclude that they are not quite such as could be wished.

Self coloured, or Whole feathered White or Black Jacks are often to be met with, but they fall short in their properties as compared with their better-known brethren we have described, being generally coarse in frill and hood, and the Whites, in the majority of instances, showing the black or bull eye; and we fear that till these deficiencies are overcome such birds will always stand a very poor chance in the show pen.

As regards breeding, they are prolific and good nurses. In matching, we strongly advise the crossing of no colours except the Reds and Yellows.

In conclusion, we believe that there is no variety of Toys that has of late been so neglected by the fancy. A perfect pair is seldom to be met with at our shows, they being generally ill-matched both in size and marking: the cock as large again as the hen, and coarse in every point, or one or the other, foul in flights, or very irregularly cut.

Well may the question be asked, "Where are the Jacobins gone?" And pleased, indeed, should we be to see fanciers take them up, and with careful selection and a certain amount of in-and-in breeding restore them to what they have been and should be. This we hope to see effected ere long.—Birmingham Columbarian Society.

INFLUENCE OF EACH PARENT.

Mr. L. Wright, in his remarks on the influence of the male bird, takes up a matter which will be very difficult to decide, and a great many opinions will, no doubt, be formed amongst breeders as to its real foundation. The question is a very important one, and should have had the attention of breeders years ago.

I will quote two cases. Two Spanish pullets, a Spanish cockerel, and a Cochin cock, had been reared together in my yard. After the pullets began to lay the Cochin was removed, and after the expiration of six clear weeks eggs from the two pullets were taken up for sitting, but feather-legged Black Spanish appeared; the plumage was perfectly black, and so were the leg feathers.

Mr. Wright quotes a case, that one visit to a Turkey cock fertilises the whole batch of eggs. I agree with him; and so with the common hen, as my experience will show. I had a Black Red hen; after being broody and laying one egg, she was sent to visit a Brown Red cock, was thrown down in the yard, allowed to remain a few hours, was taken up and brought home, and laid nine eggs; each egg produced a chicken, and each like the male bird, which was Brown Red. I may mention that after the hen was brought home she was kept entirely by herself.

These facts would lead us to believe that we are not sufficiently careful in mating for exhibition; no doubt considerable sums are spent in purchasing stock birds, which, after being received, are turned into the yard of the breeder, the eggs taken up at once for sitting, and the result is unsatisfactory produce, because the influence of the previous male is left, and in my opinion for ever will be more or less. Here the seller I daresay in many cases is blamed, and is probably told that his prize-winning stock bird has produced nothing but rubbish, at the same time the fault rests with the breeder. My opinion is, that hens intended to be bred from should be kept in a yard entirely by themselves, at the proper season to be mated with the cock or cocks you wish to breed from. I believe the influence of the first union is never thoroughly erased.—Robt. Payne, *Briarfield*.

Not long ago I imported a trio of Dark Brahmas to Canada, where I then resided. Being the first of the variety in the country they were very much admired. A pair were shown at the spring meeting of the Ontario Poultry Association, their owner having been elected an honorary member of that spirited and energetic Society. Having entered the birds at what was considered a prohibitory price, I thought myself safe to bring them home again, but to my great chagrin they were claimed. Thus I was left without a Brahma cock, and the short Canadian hatching season must be over before I could import another. My remaining pullet had not long been laying, and I then allowed her to run with a Silver-spangled Hamburgh rooster, and with five hens. Every egg laid for ten days produced a pure Dark Brahma chick; the egg laid on the eleventh day brought forth a half-bred. Strange to say, the Brahma pullet never liked her Spangled mate, she did not seem to flourish, and ere long came to an untimely fate.—Chanticleer.

The letters on the influence of the male bird, &c., are very interesting, and remind me of a somewhat similar controversy relative to horses, which resulted, after some hundreds of letters had been published, in the conviction that the male, as a rule, stamped the progeny with outward form and colour, the most decisive argument being used by a clergyman, who reminded his opponents that the produce of the pony and female ass had the ears and shape of the horse, and hinnied like him, while the produce of the ass and mare had the long ears and cross of the ass, and brayed. Hence I think the male stamps the progeny with form and colour, and I believe the female gives constitution; at least, in horse-breeding it is looked to above all other things to have a sound constitution on the mare's side.

I believe "F. S. F." (see page 281) was unwise in buying the "handsome Buff Cochin pullet, weighing 9 lbs.," to breed from, as fowls have their constitutions ruined by training or feeding for shows. I recollect an anecdote of the Royal breeding stud at Hampton Court which may illustrate some of the views of your correspondents. A thorough-bred mare had a foal by a zebra, and for several seasons afterwards she had foals marked partially and visibly in a similar manner to the mule foal striped like the zebra; it was the action of her imagination of course. I often thought that that myth in poultry, the white fowl with black topknot, could be produced by sewing a black crest on a white cock. I would try the experiment had I the time.—Lyle.

WHARFEDALE POULTRY SHOW.

The seventy-third annual meeting of the Wharfedale Agricultural Society was held in a large field on the northern bank of the river Wharfe, at Otley, on the 21st inst. Fortunately the weather was very fine, although rain fell heavily on every other day of the week, and the good old town of Otley, that favourite resort of pleasure-seekers in early spring, put on a gay and animated appearance. This was the most successful of the Society's Exhibitions, through the able management of the Secretary, Mr. Lee. The number of entries was nearly two hundred in excess of those in any previous year. There was an excellent display of poultry, and in some of the classes the competition was keen.

Spanish came first in the schedule, but were not nearly so good as last year. The *Dorkings*, which seldom excel in this locality, were few in number, but the winners good. Among the *Cochins* were some good birds, but few good pens, the first-prize hen suffering from diseased feet. *Polish* fowl were very fine, and the whole class commended. Among the *Game* were some birds exceedingly true to colour. Of the Reds, Brown Reds were first and Black Reds second, and in the contest for the Game cup, the second-prize pen was awarded the cup, a separate entry being required to enable them to compete. These birds were, however, very fine in all points. The *Hamburghs* were, as may be expected, the best gathering in the Show. With the Gold-spangled the contest was close, and the birds of high merit; but of the Silver-spangled, the first-prize pen stood clear of all competition, being perfect in spangling and rich in colour. The cup for Any variety except Game was won by this pen. The Pencilled Hamburghs of both colours were very good, the first-prize Golden pen containing a male bird of great beauty. The Black Hamburghs were good as a class, though some of the birds were a little white on the face. The Game *Bantam* class was not good, although the entries were numerous. The first prize was awarded to Black Reds, and the second to Brown Reds. There were some good pens of Black Bantams, but many of them were short-feathered, and we thought an unnoticed pen should have been placed first.

There was a class for single Game Bantam cocks, in which the birds were much better than in the pens of that variety. The Variety class contained Pekins and Silver Sebrights, which we thought very good.

The *Turkeys* were large, and fine in plumage. The Aylesbury *Ducks* were poor, but in the Variety class for Ducks were some good birds, Viduata Whistling Ducks being first, and Carolinas second. The whole class was noticed.

Some augmentation of the *Pigeon* schedule had been made, although the prizes were still but poor; yet the attempt to improve this section met with a ready response. The quality of the birds was unexceptionable, and we hope the Committee will make a greater reconstruction of the prize list, as we feel quite confident that this department can easily be made more than self-supporting.

In the Carrier class the birds were pretty evenly balanced, the first being Blacks, and the second Duns, these and the rest of the birds being all aged. The Pouters were also good as a whole, the first-prize pen of Blues standing quite out in the Show, and securing the cup for

the best pen of Pigeons. The second were White. The Barbs were good, the first prize being awarded to Duns, and the second to Blacks. Of Jacobins, the first were Reds, and the second Yellow, both pairs being nice specimens. Of Turbits, the first-prize birds were Red, and the second Blue, both pens highly deserving their position; but a pen in this class belonging to Mr. Lund was disqualified, as a mode of trimming had been adopted that displayed considerable skill and practice on the part of the manipulator. The spike of the cock bird not being the proper shape, had been placed in the right position, and there secured with starch, gum, or some other glutinous substance, and beautifully powdered over with Spanish white or some other article likely to give a frosted appearance, and we must admit that at first sight the effect was very good. In Short-faced Tumblers the contest lay between two pairs of Almonds, the first being very good in skull and ground colour, but not so good in eye and marking as the second. Of common Tumblers the first-prize pair were the best Red Mottles we remember to have seen, and the second were very good Red Baldpates. The Antwerps were as good as could be wished, the first sound-coloured Duns, the second very handsome Red Chequers, and the whole class was well deserving of notice. The Fantails were good, but some of the pens too small for a proper display of their style. Of Owls, the foreign variety eclipsed the rest entirely, not a single correct English Owl being worthy of notice. Blues won the prizes, although one pair of Blue-tailed Whites were very fine. Many more prizes might have been worthily dispensed in the Variety class as most of the birds were very good; the first position was awarded to a handsome pair of Black-Mottled Trumpeters, and the second to an exquisite pair of German Ice Pigeons.

SPANISH (Black).—1, E. Newbitt, Epworth, Lincolnshire. 2, J. J. Booth, Silsden. *hc*, H. Beldon, Goitstock, Bingley (2). *c*, J. Powell, Bradford.

DORKINGS.—1, J. White, Warlaby, Northallerton. 2, Miss B. Peirse, Bedale.

COCHIN-CHINA.—1, E. Leach, Rochdale. 2, J. Rollinson, Lindley, Otley. *hc*, H. Beldon; J. Dixon, Bradford; H. C. Mason, Drighlington, Leeds. *c*, J. Watts, Birmingham.

BRAHMA POOTRA.—1 and 2, H. Beldon. *hc*, J. Watts; J. B. Britton, Pottery, Leeds.

POLAND.—1, W. Harvey, Sheffield. 2, H. Beldon. *hc*, H. Beldon (2); H. B. Smith, Brooklands, Preston; T. S. Turner, Boroughbridge.

GAME.—*Red.*—1, J. Hodgson, Bradford. 2, J. Rollinson. *hc*, Lund & Lambert, Silsden; W. Johnson, Idle, Leeds. *c*, W. Spencer, Haworth. *Cock.*—1, T. Oldfield, Shibden, Halifax. 2, J. Rollinson. *Any other Variety.*—1, H. C. Mason. 2 and Cup, J. Rollinson.

HAMBURGHS.—*Golden-spangled.*—1, H. Beldon. 2, J. Rollinson. *hc*, J. Newton, Silsden. *Silver-spangled.*—1 and 2, H. Beldon. *hc*, J. Newton; Ashton & Booth, Mottram, Cheshire. *Golden-pencilled.*—1 and *hc*, H. Beldon. 2, J. Rollinson. *Silver-pencilled.*—1, 2, and Cup, H. Beldon. *Black.*—1, C. Sidgwick, Keighley. 2, W. Collyer, Dubb, Bingley. *hc*, H. Beldon.

GAME BANTAMS.—1, F. Steel, Marsden Hall, Burnley. 2, E. Newbitt *hc*, Bellingham & Gill, Woodfield, Burnley; E. Newbitt. *Cock.*—2, S. Smith, Northowram, Halifax. *hc*, E. Newbitt. *c*, J. Rollinson.

BANTAMS.—*Black.*—1, W. Moore, Keighley. 2, J. Watts. *hc*, J. Rollinson; H. Beldon. *c*, J. Walker, Halifax. *Any other Variety.*—1, H. Beldon. 2, Mrs. R. Frew, Kirkcaldy, Scotland. *hc*, Miss R. C. Frew, Kirkcaldy.

ANY OTHER VARIETY.—1, H. Beldon. 2, J. Watts (Sultans). *hc*, J. Rollinson; H. Beldon; Mrs. J. Cross, Brigg. *c*, Miss B. Peirse.

DUCKS.—*Rouen.*—1, E. Leach. 2, J. Newton. *hc*, A. West, Worsthorn, Burnley; J. Dixon, Bradford. *c*, C. Graham, Aldborough, Boroughbridge. *Aylesbury.*—1, E. Leech. 2, T. Carvers, Boroughbridge. *Any other Variety.*—1, W. Binns, Pudsey (Whistling Ducks). 2, H. B. Smith, Brooklands, Preston. *hc*, S. & R. Ashton, Mottram; H. B. Smith; J. Dixon, Bradford (Carolinas and Pintails).

TURKEYS.—1, E. Leach. 2, F. Steel. *c*, S. Beaeroft, Fewston; T. Smith, Staveley, Boroughbridge; M. Kew, Oakham, Rutland.

SELLING CLASS.—1, W. Firth, Birkenshaw. 2, Baxter & Dawson, Idle, Leeds

PIGEONS

CARRIERS.—1, E. Horner, Harewood. 2, H. Yardley, Birmingham. *hc*, W. Harvey, Sheffield.

POUTERS.—1 and Cup, J. Hawley, Bradford. 2, E. Horner. *hc*, H. Beldon; W. Harvey.

BARBS.—1, E. Horner. 2, H. Yardley. *hc*, W. Harvey.

JACOBINS.—1 and 2, E. Horner. *c*, W. C. Dawson, Otley.

TURBITS.—1, H. Yardley. 2, H. Beldon. *hc*, W. Lund, Shipley; H. G. Poole, Bradford. *Disqualified W. Lund.*

TUMBLERS. *Short-faced.*—1, E. Horner. 2, W. Harvey. *hc*, W. Lund; E. Horner. *c*, H. Yardley. *Common.*—1, W. Harvey. 2, H. Beldon. *hc*, A. Bentley, Baildon. *c*, W. Lund.

ANTWERPS.—1, E. Horner. 2, W. Lund. *hc*, J. W. Collinson, Halifax; W. Lund; J. Cundall, Copt Hewick, Ripon. *c*, W. Firth.

FANTAILS.—1, W. H. Tomlinson, Newark-on-Trent. 2, W. C. Dawson. *hc*, H. Beldon; E. Horner.

OWLS.—1, W. Harvey. 2, E. Horner. *hc*, W. C. Dawson; H. Beldon.

ANY OTHER VARIETY.—1, J. Cundall. 2, W. C. Dawson. *vhc*, H. Yardley; W. Bearpark, Northallerton. *hc*, H. Beldon; J. Kirkbright, Bradford; J. Cundall; T. Speight, Bradford (Dragoons).

The Judges were—for *Poultry*, Mr. R. Teebay, Fulwood, Preston; for *Pigeons*, Mr. E. Hutton, Pudsey, Leeds.

PRIZE MONEY AT THE LATE THIRSK BIRD SHOW.

AT the above Show, held December 28th and 29th, 1870, I was an exhibitor; the Judge awarded me two first and three third prizes, and not receiving my prize money within four or five weeks after the Show closed, I wrote to Mr. Bailey, the Secretary, respecting it, and at last had a reply, of which this is a copy. "March 7th, 1871. Sir, I intend paying all prize money as soon as I get prize money call in, which I expect will be in about a week.—Yours, &c., T. BAILEY." Although six weeks have elapsed since Mr. Bailey wrote the above note, and nearly four months have elapsed since the Thirsk Bird Show was held, I have received neither money nor any other note from him, and I believe no other prizewinners from Middlesbrough have seen the colour of his coin, and those who have written him have either had their letters ignored or been similarly treated to myself. If I do not receive my prize money by the end of this month, April, I shall put the matter into the hands of my solicitor.—RICHARD HAWMAN, 94, *Marton Road, Middlesbrough-on-Tees.*

THE STROUD POULTRY SHOW.

PERMIT me to echo the wish of your correspondent, "AN OLD EXHIBITOR," that the Stroud Poultry Show and that of the Bath and West of England Society at Guildford may be prevented from falling on the same days. As a member of the Society I am bound to support the latter, although I should have liked to help a poultry show in my own county by sending six or seven pens, and I hoped to have seen the show also. But, as "AN OLD EXHIBITOR" incontrovertibly argues, neither exhibition poultry nor their owners possess the power of ubiquity. The Stroud Show will suffer to a greater or less extent if the time fixed for it cannot be altered; in fact, the two exhibitions will mutually injure each other, which is to be regretted.—GLOUCESTERSHIRE.

GREAT HARWOOD SHOW.

WE, the Secretary and Treasurer of the Great Harwood Agricultural Society, have had brought under our notice a letter in your issue of the 6th of April, from Mr. Yardley, of Birmingham, complaining that his best Carrier hen and best pair of Barbs were not in the pen at the time of judging. On referring to our officer, who has been connected with our Society for many years, we are assured that all kinds of poultry, inclusive of Pigeons, were penned long before the Judge commenced his duties. Secondly, all poultry, inclusive of Pigeons, were penned according to catalogue. Thirdly, Mr. Yardley's birds were penned as soon as they arrived, and prior to the Judge commencing his labours. They were also fed as early as convenient, and further, they were also housed, fed, and properly cared for during the night of Thursday, and dispatched on Friday morning, arriving, according to Mr. Yardley's letter, at their destination at 7.40 P.M. on Friday evening all right. Mr. Yardley's letter contains a grave charge against the officers of this Society, and from evidence in their possession they require a retraction.—JAMES DEARDEN, *Treasurer;* ASPINALL CLAYTON, *Secretary.*

[As legal proceedings are threatened by Mr. Hewitt and others, we must decline inserting anything more on the subject. Mr. Hewitt declined acting as Judge any more at the Great Harwood Show.—EDS.]

NOTES FROM MY CANARY ROOM.—No. 5.

ANY eggs "chipped" yet? Little "raw gobbies" should be plentiful by this time. If my directions have been carried out, the thirteenth morning following the sitting of the hen will have ushered into existence the helpless little strangers, for with the confidence of that model matron, Mrs. Gill, you may back the bird "agen Moore's Almanack, to name the very day and hour." The young mother will have done her duty in fitting-up the cradle, but I am afraid I have been somewhat remiss in not furnishing an inventory of articles for the basket. It reminds me of my old friend again. "Don't say its you Mr. Whilks, and that poor creetur Mrs. Whilks with not even a pincushion ready. Don't say its you, Mr. Whilks." Well, it *is* rather an anxious time, especially for beginners, and I can enter into the feelings of a friend, who with grave countenance retired to the quiet of his domestic circle at an early hour the other evening, because he expected a hen to chip in the morning!

The great event over, the main question for the next week is to see that the young birds are well fed. But a comparatively small per-centage of those hatched are reared. It all depends upon whether the hen will feed well. The cock always will, but if the hen will neither feed nor leave the nest to give the cock a chance of popping a morsel into their gaping mouths, a consequence too familiar to Canary breeders quickly follows.

Have ready some hard-boiled egg, which pass through the egg box, a simple frame about 8 or 9 inches square covered with perforated zinc. It is a more expeditious and thorough method than chopping it. Mix with some crumb of stale bread, either dry or soaked, and well squeezed. Let there be more egg than bread at first, but add more bread as the birds grow older. Instead of bread crumbs, sweet biscuit, arrowroot biscuit, or water biscuit may be used, and a little crushed hempseed added; but if the birds get too fond of the latter, it is difficult to discontinue it. Supply this food fresh not less than three times a-day, with a sprig or two of nice, fresh, young groundsel or chickweed, or a leaf of lettuce when it is to be had.

If the hen be in good health she will almost immediately begin to feed, and though the young birds can live for the first twenty-four hours of their existence on nothing, or next to nothing, I like to see the hen ask them if they are hungry as soon as they are chipped. Should she refuse to feed, mix a little of the hard-boiled yolk with a little saliva, and give it to the young ones little and often, and it will frequently happen that after

assisting in this way for a day or two, seconded by the cock, who will always watch his opportunity to give them a mouthful, the hen seems to overcome her disinclination to feed, and things go on famously; but there is all the difference imaginable between a nest which is well and regularly fed, and one attended to by fits and starts. Continue this diet till next week.—W. A. Blakston.

HERMAPHRODITE BEES.

I herewith enclose another hermaphrodite bee of a different type than the last. I noticed several errors in my last article on these bees. It read as if it was the worker that had the curved sting, whereas it is the queen that possesses that property. Also the heat was stated to be 80°, but ought to have been 8°, being 24° of frost.—A Lanarkshire Bee-keeper.

[We forwarded the specimen to Frederick Smith, Esq., of the British Museum, who has kindly sent us the result of his inspection.

"With regard to the bee received, I must say that the intermixture of sex is not so marked as in the specimen I received a short time ago. The head is that of a male—in fact, it is only the left posterior leg that exhibits the worker form; both the antennæ are male.

"There is a paper by Professor Siebold in Kölliker's 'Zeilschrift,' 1864, page 73, 'On Hermaphrodite Bees.' It appears that a hive sometimes contains numbers of these monstrosities, and that the degree of mixture of sex is infinite, frequently only presenting itself in a single organ—the mandible, eye, antenna, or a single leg. The remarks are upon hives of the Italian bee. It is stated that 'these hermaphrodite bees are seized by the workers at the moment of their issuing from the cells, and thrown out of the hive.' The queen of the hive that produced these hermaphrodites was pure Italian, and five years old."]

OUR LETTER BOX.

Sale of Poultry (*Duckling*).—There are none sold in Covent Garden. Write to some salesman in Leadenhall Market.

Dark Brahmas (*T. Rains*).—You had better write to the advertiser; we cannot find space for the correspondence.

Pullet not Seeing Food (*H. V.*).—Your pullet is nearly blind. The complaint she has is in most cases hereditary, and used to be known in former years as being Jerry-eyed, because a celebrated cock named Jerry, the property of Mr. Sturgeon, was afflicted in that way. If you examine the eye minutely, you will easily see the defect. It is a defect, and an obliquity of vision; the bird can see to avoid anything, but cannot see straightly enough to pick up a grain of corn.

Guinea Fowls not Exhibited (*E. H.*).—There is nothing to show in Guinea Fowls. There are no distinguishing marks. They are unprofitable to keep. There can be no judgment; Cæsar and Pompey are so very much alike.

Cock with Swollen Foot (*Poultry*).—If he is not very valuable, or if he is not essential to your yard, kill him. He will only lead to disappointment.

Keeping Eggs for Sitting (*One Who Reckons Her Chickens*).—We never trouble ourselves about the position of the eggs. We make it a rule to put them under the hen while they are very fresh, and do not believe under the circumstances it matters at all about the position in which they lie *en attendant*. Crêve-Cœur eggs are not more unfertile than others. The breed differs only from many others by being non-sitters. At the same time we are bound to admit Brahmas and Cochins hatch wonderfully. While we are on the subject, we will add one word—the experience of this season has convinced us that Dorkings are the best mothers of any of our large breeds.

Preparing Fowls for Exhibition (*Tally-ho*).—All that is necessary to prepare fowls for exhibition is to feed them well and keep them clean. In breeding Game Bantams the necessity is to reduce the size, and the difficulty is to keep all the attributes and points of the large bird, borrowing only diminutive size from the Bantam. A crooked breast is always a disqualification in a Game fowl.

Most Profitable Fowls (*A Subscriber, W. R. H. P.*).—You must be more explicit before we can answer your question. How do you propose to make your fowls profitable?—by the sale of them at market for table purposes, or by the sale of eggs? If you want a good hardy fowl of all work, keep the Brahma Pootra. If you patronise the "upper ten thousand," try the Dorking.

Fowls *versus* Ducks (——).—We do not admire your feeding, you fall into a common error. You give a quantity of indifferent food in order to satisfy the hunger of your Ducks, but there is not sufficient stay in it. Indian meal is bad feeding, and the thirds do not much improve it. They do not want their food scalded with hot water. If your Ducks are fed in confinement, give them oatmeal or whole oats put in a shallow vessel of water. If at liberty, throw them whole oats on the ground close to the water.

Royal Dublin Society's Poultry Show.—"The name of the exhibitor whose birds were disqualified for trimming in the Game classes, is Mr G. A. Perrin. A large number of the hackle feathers had been cut out. In that part of the report which refers to Pouter Pigeons, read 7¼ inches in place of 9¼.—Your Reporter."

Cramp in Pigeons (*W. M.*).—Cramp is caused by cold or damp. Give your young bird hempseed in its food, and place it in a warmer situation.

Blue Jacobins (*R. M. Smith*).—The last Blue Jacobins we saw were, if our memory serves us right, at the last Southampton Show. We have sent your letter to more than one Pigeon fancier but without success. An advertisement would be the only way to bring you what you want, as if Blue Jacobins are to be had, some one possessing them would either see or hear of the advertisement.

Pigeons Losing Feathers, &c. (*W. T. S.*).—We fear your birds are not moulting, but have the rot feather, which liberty, the bath, and change of food may help to cure. Your Barb's disease arises from cold; put him in a warmer place and give him stimulating food, such as hempseed.

Canary Eggs Unfertile (*A Novice*).—The onus rests with the male bird. Try another. You can easily determine whether it be a Goldfinch Mule by its general resemblance to the Goldfinch, principally about the head, which will bear the crimson "flourish" in a greater or less degree. If it be a Mule, it is of no use except as a song bird.

Incubators (*Ignoramus*).—There have been many invented, but not one has proved useful. They have been tried by many, and invariably their use abandoned.

METEOROLOGICAL OBSERVATIONS,

Camden Square, London.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude 111 feet.

Date. 1871. April.	9 A.M. Barometer, at 32° and Sea Level.	9 A.M. Hygrometer. Dry.	9 A.M. Hygrometer. Wet.	9 A.M. Direction of Wind.	9 A.M. Temp. of Soil at 1 ft.	In the Day. Shade Temperature. Max.	In the Day. Shade Temperature. Min.	In the Day. Radiation Temperature. In sun.	In the Day. Radiation Temperature. On grass	Rain.
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
We. 19	29.173	53.9	52.8	S.W.	49.6	59.0	50 0	93.0	49.4	0.066
Th. 20	29.288	47.6	46 3	S.W.	49.3	52 3	41.2	89 0	39.0	0 050
Fri. 21	29.551	51.5	47.2	N.W.	48.8	57.9	45.8	94.0	42.7	0.040
Sat. 22	29.801	52.5	51 3	N.W.	49.1	61.5	48.5	99.2	43.4	0.020
Sun. 23	29.645	52.6	49.0	N.W.	49.5	61.0	45.9	112.0	42.3	0.030
Mo. 24	29.949	48.0	46.0	N.	49.4	54.9	41.2	71.0	38.2	—
Tu. 25	30.071	50.0	47.2	S.E.	48.9	57.2	41.9	85.3	39.0	—
Means	29.683	50.9	48.5		49.2	57.7	44 9	91.5	42.0	0 206

REMARKS.

19th.—Rain in the night and till noon, fine afternoon though there were slight showers, lightning at 4.15 P.M., but fine evening.

20th.—Heavy rain from 8 to 9 A.M., occasional showers till 5 P.M., then fine, shower at 10 P.M., but soon over.

21st.—Very fine till noon, then cloudy and dull, rain between 5 and 6 P.M., and damp all the evening.

22nd.—Rain at 8 50 and till 2 P.M., then cleared off, evening rather dull.

23rd.—Fine in early morning, rain at 9.50 A.M., the fine rain again at 5.50, but fine evening.

24th.—Rather dull all day, but without rain.

25th.—Dull and heavy, but with occasional sunshine.—G. J. Symons.

COVENT GARDEN MARKET.—April 26.

Some improvement has taken place in the demand during the past week, but not sufficient to cause any advance in prices, business being generally of a steady character. A considerable quantity of late Apples are still offered, such as Golden Knob, Deux Ans, and Gooseberry Pippin. Dessert varieties, however, are not so plentiful. Pears are nearly over for this season. Markets for old Potatoes are very heavy, and large consignments of Lisbon and Maltese new ones are to hand, ranging from 20*s.* to 3*s.* per cwt.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples ..... ½ sieve	1	6	to 3	0	Mulberries ..... lb.	0	0	to 0	0
Apricots ..... doz.	0	0	0	0	Nectarines ..... doz.	0	0	0	0
Cherries ..... lb.	0	0	0	0	Oranges ..... ℔ 100	6	0	10	0
Chestnuts ..... bushel	10	0	18	0	Peaches ..... doz.	40	0	60	0
Currants ..... ½ sieve	0	0	0	0	Pears, kitchen ..... doz.	2	0	6	0
Black ..... do.	0	0	0	0	dessert ..... doz.	0	0	0	0
Figs ..... doz.	0	0	0	0	Pine Apples ..... lb.	6	0	10	0
Filberts ..... lb.	0	0	2	0	Plums ..... ½ sieve	0	0	0	0
Cobs ..... lb.	2	0	2	6	Quinces ..... doz.	0	0	0	0
Gooseberries ..... quart	1	0	1	6	Raspberries ..... lb.	0	0	0	0
Grapes, Hothouse .... lb.	8	0	18	0	Strawberries ..... oz.	0	6	1	0
Lemons ..... ℔ 100	6	0	10	0	Walnuts ..... bushel	10	0	16	0
Melons ..... each	0	0	0	0	ditto ..... ℔ 100	1	0	2	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes ..... doz.	4	0	to 6	0	Leeks ..... bunch	0	4	to 0	6
Asparagus ..... ℔ 100	4	0	8	0	Lettuce ..... doz.	1	0	2	0
Beans, Kidney .... ℔ 100	1	0	2	0	Mushrooms ..... pottle	1	0	2	6
Broad ..... bushel	0	0	0	0	Mustard & Cress .. punnet	0	2	0	0
Beet, Red ..... doz.	2	0	3	0	Onions ..... bushel	7	0	10	0
Broccoli ..... bundle	0	9	1	6	pickling ..... quart	0	0	0	0
Brussels Sprouts .. ½ sieve	0	0	0	0	Parsley ..... sieve	3	0	6	0
Cabbage ..... doz.	1	0	2	0	Parsnips ..... doz.	0	9	1	0
Capsicums ..... ℔ 100	0	0	0	0	Peas ..... quart	3	0	10	0
Carrots ..... bunch	0	4	0	8	Potatoes ..... bushel	2	0	4	0
Cauliflower ..... doz.	3	0	8	0	Kidney ..... do.	3	0	4	0
Celery ..... bundle	1	6	2	0	Radishes .. doz. bunches	0	6	1	0
Coleworts .. doz. bunches	3	0	6	0	Rhubarb ..... bundle	0	4	1	0
Cucumbers ..... each	0	6	1	6	Savoys ..... doz.	1	6	2	0
pickling ..... doz.	0	0	0	0	Sea-kale ..... basket	2	0	3	0
Endive ..... doz.	2	0	0	0	Shallots ..... lb.	0	6	0	9
Fennel ..... bunch	0	3	0	0	Spinach ..... bushel	3	0	5	0
Garlic ..... lb.	0	3	0	0	Tomatoes ..... doz.	0	0	0	0
Herbs ..... bunch	0	3	0	0	Turnips ..... bunch	0	6	0	6
Horseradish .... bundle	3	0	5	0	Vegetable Marrows .. doz.	0	0	0	0

WEEKLY CALENDAR.

Day of Month	Day of Week.	MAY 4—10, 1871.	Average Temperature near London. Day.	Night.	Mean.	Rain in 43 years. Days.	Sun Rises. m. h.	Sun Sets. m. h.	Moon Rises. m. h.	Moon Sets. m. h.	Moon's Age. Days.	Clock after Sun. m. s.	Day of Year.
4	Th	Meeting of Royal and Linnean Societies.	62.4	38.5	50.5	16	29 af 4	26 af 7	54 af 6	36 af 4	○	3 22	124
5	F		62.9	39.0	50.9	22	28 4	27 7	23 8	2 5	15	3 27	125
6	S		62.3	38.5	50.4	16	25 4	29 7	49 9	32 5	16	3 33	126
7	Sun	4 Sunday after Easter.	60.3	39.4	49.8	18	24 4	30 7	noon	10 6	17	3 37	127
8	M	Meeting of Royal Geographical Society.	62.6	39.6	51.1	18	22 4	32 7	16 0	57 6	18	3 42	128
9	Tu	[8.30 P.M.	62.6	39.9	51.2	19	21 4	33 7	8 1	59 7	19	3 45	129
10	W	Meeting of Society of Arts, 8 P.M.	62.4	40.1	51.3	21	19 4	35 7	47 1	11 9	20	3 48	130

From observations taken near London during forty-three years, the average day temperature of the week is 62.2°, and its night temperature 39.3°. The greatest heat was 84°, on the 6th, 1862; and the lowest cold 20°, on the 6th, 1865. The greatest fall of rain was 1.26 inch.

FORM AND COLOUR.—No. 1.

FORM, its effect upon our minds, our lives, our very actions—do we, or have we fully realised it in its full force and power? Who has not felt its subtle influence or yielded to its allurements? All bow to its sway, and follow its leading in one way or another, for it presents itself to us in such an endless variety that it is not at all difficult to understand why its power must be universal. To some it best displays itself in the grandeur of mountain scenery, where huge rocks rear high their massive crests, towering into the clouds, which at times rival them in the grandeur of their aspect, and certainly excel them in the varied beauty of their changing colours—or in the spreading landscape gently undulating, intersected by watercourses, and dotted with snug homesteads; the teeming fields or crowded stackyards proclaiming the fertility of the soil, and the industry of those who tend it; the entire scene breathing of peace, contentment, and prosperity. To others it displays itself in the huge proportions of colossal timber trees, or in the elegant symmetry of plants of more lowly growth. The lovers of birds, of insects, or of any of the wonders of creation are all sensible of its beauty and power in a greater or less degree. Its influence knows no bounds, for it attracts us by its wonderful development in everything in nature, and leads our minds upwards to contemplate things infinite. But it also has a more numerous following in those who admire works of art the result of mechanical skill, or whatever is just in proportion or possesses the requisite fitness for its purpose. The higher the finish of such work, the nearer the approach to perfection, the greater the appreciation of those whose minds are sufficiently cultivated to appreciate its beauty. It must be owned that beauty does not invariably imply fitness. A thing may be very suitable for its purpose, and yet be destitute of beauty, but I know no reason why the two may not always be combined. Beauty has been defined as the moment of transition, as if the form were just ready to flow into other forms, and he who can best combine efficiency and finish, so as to produce beauty in his work, is likely to succeed best in what he does.

The subject is a wide and tempting one, and withal so important that I hesitate to try to grapple with it, and yet it is this very feeling which urges one on, giving one some slight idea of the great importance of a correct knowledge of a power so mighty, and which, when rightly understood and applied, must tend materially to contribute to one's success in ornamental gardening.

Passing along a magnificent avenue of noble old Fir trees lately, I was much impressed by the entire fitness and propriety of every feature of it—the dense mass of sombre foliage was borne high overhead, and the ample width of the grand drive passing along between the lines of these fine trees imparted an air of expansiveness, keeping the front ranks of trees on either side so far apart as to display their huge forms to the best advantage. I have been up the Long Walk at Windsor, and through the splendid avenue of Horse Chestnuts in Bushy Park, and in many other avenues of fine trees, but in none of them was I so much impressed with the power of form as in this avenue of Scotch Firs. It was, doubtless, a fine sight when the trees were young and feathered with branches to the ground, but now incomparably finer—the immense boles like the rows of stately pillars in some old cathedral, so massive and yet so symmetrical, that I could not but think the planter must have foreseen the effect, and been able fully to realise the power and beauty of form when thus developed.

In planting groups and belts of shrubs, the future and more permanent effect to be produced should be well considered. Shrubs planted in borders on each side of paths of gravel or turf are almost certain to produce a pleasing effect for a few years if they are healthy and tolerably well arranged; but if such shrubbery borders are to increase in beauty with the advance of time, as they ought to do, very much care and thought must be exercised first of all in the selection of the plants, and in planting them so far apart that they may have ample space to grow naturally, or to be rendered, by means of skilful pruning and training, fine symmetrical specimens, which shall, when they approach maturity and their growth attains its full development, stand so well back from the sides of the path that each form may have its due effect, and its beauty be fully appreciated. The importance of this must be insisted upon; shrubs planted thickly in the first instance look very well for a time, but if they are not constantly thinned with great care they soon become so crowded that all individuality is lost, the growth of each plant becomes merged in that of its neighbours, and a confused thicket is the result, not altogether devoid of beauty, it may be, because some of the charms of form are still present in the foliage and young growth.

There is a power of much importance in the form of foliage. I was much impressed at Battersea Park with the strong appreciation of this so evident in the selection of the shrubs clothing the sheltering slopes of the subtropical garden, none of them having very large foliage: hence the effect of the huge leaves of the tropical plants is much enhanced, appearing by such cleverly-managed contrast to be even larger and more stately than they otherwise would do. It is this keen appreciation of the power of one form on that of another, either in the contrast or harmony of the foliage or growth, or, as is more commonly the case, in the combined effect of the two, which enables the landscape gardener to produce combinations of elegant forms so skilfully arranged and so well placed that the sight of them produces an agreeable effect from whatever point they are viewed.

Important as is the work of selecting and arranging shrubs in groups and along borders, it becomes even more so when they are required for planting on a lawn as single specimens. Unless there is a special object in view, such as "planting-out" offices or concealing any objectionable feature, all shrubs should be kept well away from the house, and the lawn should have a clear unbroken expanse in proportion to the size of the building it is near; then its

surface should be dotted with shrubs selected for the elegance of their growth and foliage, coniferous plants being best adapted for such a purpose. These single specimens dispersed thinly, yet in graceful order, so as to avoid all tendency to the formality of straight lines, should serve to lead us onward to mixed groups of flowering shrubs, and others grown for the beauty of their foliage. Here the work acquires an additional interest; colour, always important, and without which the most elegant form would appear tame and spiritless, now for a time stands first, and yet while we strive to produce pleasing combinations of colour, the influence of form is never absent from our minds. In selecting flowering shrubs, amongst the most eligible are Daphnes, Azaleas, Lilacs, Berberises, and many others which with their gay flowers tend so much to brighten the months of spring; but none of them can compare with the Rhododendron for producing bold gorgeous masses of colour, to which a background of sombre-hued Pinuses serves to impart an air of grandeur and richness. Here, too, the Rose most worthily claims a place as pre-eminently combining in its lovely flowers form and colour in the highest degree of excellence. The pliant nature of its growth also admits of each plant being trained to most perfect symmetry.

It is questionable whether such groups are best liked when introduced to relieve the sameness of a wide expanse of lawn, the very introduction of them there proclaiming the general fondness of variety, and the dislike to the tameness of unbroken flat surfaces: therefore, in designing a shrubbery, an undulating surface is to be preferred, because it gives greater scope for the exercise of taste; it affords many more facilities for producing a series of beautiful scenes, thoroughly diversified, and which, if well contrived, are quite certain to be more generally appreciated, for the very reason that all naturally most admire undulating surfaces and graceful flowing lines: hence the importance of a thorough knowledge of the power of graceful forms when seen under different aspects.

In considering this power in its relation to the vegetable kingdom, I have given precedence to trees and shrubs, because of the dignity, strength, and grandeur of many of them. Nor are these properties usually developed at the expense of symmetry, for whether we look upon the huge growth and massive strength of the trees flourishing in our own climate, or upon the more slender yet elegant growth of tropical vegetation, the fitness of each for the position assigned it in Nature, the air of dignity on the one hand and of elegance on the other, must always impress the mind favourably.—Edward Luckhurst.

FRUIT PROSPECTS.

The late severe weather has been most unpropitious for the fruit crop. Blossom of all kinds is most profuse, but fruit of many kinds will be scanty. For three consecutive nights the thermometer registered 12° below freezing, each night being succeeded by a day of unclouded brilliancy. The crop of Peaches and Apricots, where unprotected, is nearly destroyed; Pears have suffered considerably. The present appearance of the trees is very fine, but very deceptive. Many blossoms have expanded since more favourable weather set in, but on examination the pistils and ovaries are black and decayed. Some of the later blossoms, however, are sound and healthy, and a fair sprinkling of fruit is expected. Apples, Plums, and Cherries do not appear to be extensively injured; but Gooseberries and Currants are terribly shattered. The weather at the time of writing is by no means genial—wind easterly; barometer, falling, 29.70. A great deal of rain is due, the fall from the beginning of the year to the present date being only 4 30 inches, and half of this was from melted snow.

Since writing the above I have inspected the fruit garden of "C. C. E." It is just now a magnificent sight. Could some of the perfectly-formed bloom-laden specimens of fruit trees be transferred to and intermixed with the shrubs in pleasure grounds, how they would brighten up the spectacle of the somewhat sombre masses, and add cheerfulness, and life, and pleasure to the general effect. The Apple blossom is not quite expanded, but the Plums, Pears, and Cherries are glorious in their lovely-tinted mantle of blossom; and not only is the general effect of the long lines of beauty striking to witness, but an individual examination of the several trees tells one how thoroughly good they are. Ever improving by carefully eliminating varieties which do not come up to a high standard of excellence, and largely increasing the number of kinds of special merit and usefulness, the able and energetic owner will soon be in a position to show what a fruit garden should be, and to give accurate and valuable information of the returns derivable from large quantities of trees, founded not only on the multiplication table, but on actual practice and the incontrovertible process of weighing the fruit. A characteristic, and a valuable one, of the trees in this garden is their sturdy habit and rigid limb-like branches. These, from their base to their extremities, are crowded with blossom, and if crowded with fruit the framework of the trees is strong enough to carry it without the bending of branches, so common and so objectionable. The early-expanded Pear blossom is injured, but more than enough has escaped the frost to insure heavy crops. The Plums and Cherries are not hurt at all. The few trees of Peaches and Apricots are crowded with fruit, having been protected by canvas blinds worked by rollers and pulleys and other effectual contrivances. The wind has at last shifted from the east, refreshing showers have fallen, and the weather is more genial and spring-like.—J. W., *Lincolnshire*.

THE GOLDEN PYRETHRUM.

I can testify to the truth of what your correspondent, Mr. Thomas, says concerning the above-named plant, and especially when he states that it is one of the most effective plants for the spring flower garden. I know it has been condemned and discarded by many people, and I think too hastily, for beyond its summer attractions, if the plants can be so arranged in summer as to come in without much interruption for spring bedding they give a cheerful and bright appearance to the flower garden such as no other plant can excel. In many parts of the country, however, it does not pass the winter without considerable loss, particularly when the natural soil is heavy and badly drained; for I consider that it is from wet more than frost that the plants die. In a deeply cultivated gravelly soil it has, as I have seen in many places this spring, withstood the severe winter without injury, has been the most attractive and highly-praised plant of any for spring decoration, and is increasing in beauty daily. Its effect is increased, too, by the healthy green the lawn has lately assumed through the growing showers of April.

I think that a dry autumn and a slow growth are as favourable to this Pyrethrum as any other hardy plant for passing successfully through a severe winter. The plants to which I allude as being so beautiful now were little else than naked stumps last January. Some plants when commencing to grow in March will break more weakly than others, so that a little re-arrangement is necessary, otherwise I advise as little interference as possible.—Thomas Record.

HOP CULTIVATION FOR ORNAMENT AND USE.

No. 5.

Red Spider seldom attacks the Hop, yet it did so rather severely in 1868. Sulphur seems to have little effect on it, but this remedy has been but little tried.

A more destructive enemy is a sort of *flea* or weevil, which eats into the Hop itself, causing it to turn black, and doing a great deal of damage. There seems to be no remedy for this but picking the crop as soon as possible, as the operations of the insect are beyond the reach of anything that may be applied. The other insects which injure the Hop are not important. Two or three kinds of caterpillars appear to give this plant a preference, but they are not numerous enough to create alarm.

Hop-picking and Drying.—I now come to the picking and drying—very important processes, the former requiring the aid of a great number of workpeople; and the employment being of a kind that anyone may engage in, great numbers of the lower class of London poor come down every year to assist in the operation, bringing their little ones with them. They are generally lodged in sheds often built on purpose away from the farm buildings, on account of the danger from fire, as the occupants of such places are not always the most careful, and "Hopping time" requires a more than ordinary outlook for dangers of that kind. I will pass over the hubbubs which sometimes occur at beershops at this season, as well as the crowding of provision shops on Saturday nights, and at once proceed to Hop gardens, where we shall see the pickers have commenced operations. A man called the pole-puller or binman cuts the bines of a number of poles about 2 feet or more from the ground, and with the aid of a tool made for the purpose of drawing the poles out of the ground, clears a place where the bins are put down. These bins are a sort of skeleton frame on which a cloth is fixed, so as to make a trough about 6 feet long by 2 feet wide, and the same in depth. Into these the Hops

are picked off separately from the vines, and measured and taken away at stated times during the day, the picker being paid by the piece. The rule in Kent is so many bushels to a shilling, varying from two or three in a bad year to eight or ten in one that is good. This arrangement is called the tally, and used formerly to be kept account of by veritable tallies, which have now entirely disappeared. Tallies for the Hop garden were pieces of lath about 18 inches long and 2 or more broad, and were in pairs, one being held by the master or his bailiff and the other by the picker. A large number were wanted in a Hop garden. The bailiff or the booker had his lot all strung together by a cord running through a hole at one end and thrown over his back; and when the Hops of a picker, say No. 17, were measured, the tally of that number was looked out, and No. 17 also produced his or her tally, which was of precisely the same description as that of the booker; and these tallies being laid together, a notch was cut in each by the same cut either of a knife or small saw, and this being repeated every time a measurement was made, both master and picker kept an account. Notches made or removed in either tally would be easily seen when they were put together; hence, no doubt, originated the very common phrase "They did not tally." This plan, I believe, lingered on amongst some elderly people until thirty or forty years ago, but it may be said to have fairly died out, and small books prepared on purpose are now used; but I may remark that tallies were not confined to the Hop garden in former days, for they were used in the Exchequer, and it was the burning of these tallies which was the cause of the fire that consumed the Houses of Parliament upwards of thirty years ago.

Finding that a large quantity of Hops are gathered and on their way to the Hop kiln, which in Kent is called the oast house, let us inspect the contrivances used for drying them.

As the season at which Hops are harvested in this country affords no chance of their being dried in the sun, and as, in fact, they are more frequently gathered when wet with rain or dew than when dry, artificial means must be adopted to expel the superfluous moisture. For this purpose fire heat in some form is indispensable, and various modes have been resorted to in applying it, each with the view of economising fuel. After various contrivances have been adopted recourse is often had to the old mode at last. The kiln in most general use is circular, or there are a number of circular kilns surrounding, or partly surrounding, a square building of considerable size. These are often from 12 to 16 feet in diameter, with brick or stone walls from 16 to 20 feet high, and a steep-pitched conical roof of flat tiles made on purpose. Instead of the roof terminating in a point it does so where it is about 3 feet in diameter, so as to leave a clear opening of upwards of 2 feet, upon which a cowl moveable by the wind is placed, so as to exclude the rain, yet allow of the escape of the steam from the Hops which are being dried. The drying floor for them is from 12 to 15 feet or more from the ground, and is made by one or two strong timber beams crossing the circle, over which are laid the smaller ones called laths, which are quarterings of about 3 inches by 2 inches laid edgewise at about 3 inches apart. Over the open latticework thus formed a hair cloth is fixed, no hempen or other textile material being able to stand the fire; and I may say the wood used is also of the most incombustible nature, being poplar, and it is surprising how even that withstands the heat, although accidents sometimes happen. Access to the drying kiln is obtained from the adjoining loft, through which the Hops are carried to be laid on, or withdrawn when dried. They are placed quite a foot thick, so that a kiln 16 feet in diameter will hold about two hundred bushels, which will require from eight to eleven hours to dry; but the fire being kept on night and day, the kilns are loaded about twelve times a-week, unless very wet weather impedes the picking.

I now come to the fires, which are of course below on the ground, and in most cases are in open flat grates raised about 18 inches from the surface. If there is only one fire it is about the centre, and quite open, with merely a piece of sheet iron, 4 feet square or so, hung by chains from the joists about midway between the fire and the drying loft; this is to divert the heated air round the edges rather than allow it all to pass directly up the centre. From this description it will be seen that the heat from the fire passes through the hair cloth and the body of Hops above it, and some will imagine that the smoke will do so also; but as only charcoal, coke, and Welsh coal are used there is no visible smoke. At a certain period of the drying process a quantity of brimstone in rolls is put on the fire to give what is called a good colour to the Hops. Whatever may be said against the practice—and I do not uphold it—there is no question as to its bleaching power. So long as the eye is the principal sense to be gratified, it is likely this mode of "getting up" the article will be continued.

In drying, the man in charge attends to his fire, keeping rather a slow one at first, lest the Hops nearest to the hair cloth receive too much heat, but in time he increases the heat when the weight of the mass is lessened by the steam being driven off; and occasionally feeling with the hand will show whether the Hops are fit to turn or not, for it must be observed that the heat from below dries those at the bottom, while those at the top are still wet. Just before all are quite dry they are turned, and soon afterwards they are taken off the kiln and laid on the adjoining loft, which is usually called the stowage, to cool before being packed, and a fresh lot is put on to undergo the same process. The men in charge remain at their post night and day, sleeping on extemporised beds. They have also to pack the Hops in the bags, and it frequently occasions surprise how so light an article can be packed so tightly without the aid of machinery, as all Hops were until within the last few years, and many are yet.

The pressing machinery I need not describe, but hand-bagging is simple enough. A bag of suitable size having been made, its mouth is fastened into a strong wooden hoop which just fits it; and as the floor where the Hops are lying is an upstairs one, a circular hole is prepared, into which the empty bag, called a pocket, is hung by the hoop at its top being a little larger than the hole in the floor. A few Hops are thrown into the bag, and a man gets into it and treads them firmly with his feet, more are added, and so on until the bag is full; but most large growers prefer a machine which does not break the Hops so much as treading. It does not appear that more Hops can be put into a pocket in this way than by treading, but the latter work does not appear to a looker-on an enviable one.—J. Robson.

STRAWBERRIES THIS YEAR.

"To be or not to be?—that is the question."

Observing in page 293 remarks upon the prospect of the Strawberry crop for the coming season, in which you apprehend a deficiency, judging from the appearance of the trusses—upon reading them I at once examined my plants, having been for several years a somewhat successful grower of that delicious fruit. My beds are not very large nor numerous, but I grow about five hundred plants, mostly of the British Queen and a few of Keens' Seedling. The result of my examination, I am happy to say, did not coincide with the fears entertained by the writer of the remarks referred to, for, with the exception of the four-year-old bed, there is every prospect of an abundant crop. The plants look the picture of health, and the trusses are numerous and strong. The four-year-old bed is perhaps not quite so good, but for the time it has been worked I find no fault with it.

My plan is to make a new bed every year, destroying the bed when the plants are four years old. I force the runners the first year, then plant them out, and work them for three years. My ground is of a stiff clayey description, and certainly suits the Strawberry. I give little or no manure, excepting when the bed is made. I cut off all the runners after the fruiting is over, excepting those required for forcing, and later in the summer, or at the beginning of autumn, I trim the plants neatly round, leaving the crown well protected by leaves, not adopting that barbarous custom of cutting off the leaves entirely and exposing the plants to the weather whatever it may be.

As your readers are invited to give their ideas upon the Strawberry crop of this season, I have, as an amateur, described my method of growing this fruit. I may add that I do not allow the roots to be much disturbed by the fork when turning the ground over between the rows, and I certainly think that manure should be applied very sparingly, as too rich ground produces only an abundance of leaves, with a short supply of trusses.—E. W. R.

GARDENERS EXCHANGING.

I sympathise with the gardener, whoever he may be, who was fined a short time since for exchanging cuttings. No doubt he was legally wrong, but, then, it is and has been a custom from time immemorial, and in fact I do not know what most gardeners would do if it were not for this custom. It is generally an understood thing between men and masters.

A well-known head gardener stated in your last week's issue

that men should have in writing from their masters full permission to exchange cuttings. Now, this is quite right, and would protect gardeners from anything unpleasant that might occur, but it should be mentioned when the engagement takes place; and who would like to bring forward such a subject, the essence of it being mistrust on the part of the gardener towards his master? I quite agree that in some cases such extremes are necessary, but where gentlemen and their gardeners understand each other, word of mouth should be sufficient. I recommend all gardeners to have a clear understanding with their employers on the above subject, for it seems that what is done for mutual benefit and satisfaction proves dangerous.—JOHN C. LEWIS, *Sudbury, Derby*.

[There need be no difficulty nor hesitation about a written understanding. We recommend every employer when he engages a gardener to give him in writing such a memorandum as this—"I have no objection to exchanges, but consult me first."—EDS]

ROYAL HORTICULTURAL SOCIETY.

MAY 3RD.

THE exhibition on this occasion, as a whole, well maintained the character of those which took place earlier in the year, the Conservatory, in which it was held, presenting bright and varied masses of colour, of which the fine specimen Roses furnished a large part.

In the class for nine Roses in pots, Messrs. Paul & Son, of Cheshunt, had the first prize for magnificent specimens of Charles Lawson, which is always fine, Madame Victor Verdier, Victor Verdier, Souvenir d'un Ami, Madame Willermoz, Marie Baumann, and Victor Verdier; and Anna Alexieff and Céline Forestier very full of bloom, but the flowers small. Mr. Turner, of Slough, who was placed second, had La France, Charles Lawson, Victor Verdier, and Vicomte Vigier in magnificent bloom, the flowers very fresh and bright, and the foliage luxuriant; Madame Eugène Appert was also very fine. For six Roses, Messrs. Veitch had a first prize for Charles Lawson, in splendid condition; Paul Verdier, very fine; Thyra Hammerich, a beautiful light-coloured Rose; President, fine; Louis Van Houtte, and Mdlle. Marie Cirodde. There was no other exhibitor in this class. In the next, for three specimens, the first and second prizes were withheld, and the third awarded to Mr. James, gardener to W. F. Watson, Esq., Isleworth.

Azaleas, with but few exceptions, did not come up to the standard of former years, the plants being smaller, and many not nearly so well bloomed. The first prize for six was withheld, and a second prize awarded to Messrs. Dobson & Sons, of Isleworth, who had very well-flowered plants of Stella, Reine des Doubles particularly good, and Souvenir de l'Exposition. The best three specimens were two balloon-trained plants of Magnificent, white, and a pyramidal plant of Symmetry, salmon rose. These stood about 3½ feet high, and were in excellent bloom. They came from Mr. Baldwin, gardener to B. Drew, Esq., Streatham, and took the first prize; the second going to Mr. Woodward, gardener to Mrs. Torr, Garbrand Hall, Ewell, and the third to Mr. G. Wheeler, gardener to Sir F. Goldsmid, Bart., Regent's Park. Mr. James, gardener to W. F. Watson, Esq., sent with others a small specimen of Iveryana, quite a mass of blossom.

Prizes were offered for collections of six Orchids, but only two exhibitors came forward—viz., Messrs. Rollisson and Mr. Bull, who took prizes in the order in which they are named. Messrs. Rollisson had a remarkably fine example of Saccolabium ampullaceum moulmeinense, Vanda tricolor with five spikes, Oncidiums, and Dendrobium Devonianum, not, however, to be compared to Messrs. Veitch's splendid specimen. Mr. Bull exhibited Cypripedium candatum with two fine flowers, Phalænopsis grandiflora, Vanda suavis, and others in good condition.

Herbaceous Calceolarias were shown in Class 11. Here Mr. James was first with six well-grown plants, with large flowers, of an excellent strain. As these Calceolarias are now almost entirely raised from seed, it is useless giving names. Mr. Hopper, gardener to E. D. Lee, Esq., Aylesbury, was second; Mr. Needle, gardener to the Comte de Paris, Twickenham, being third.

Miscellaneous subjects were again shown in considerable numbers. Messrs. Veitch sent a very beautiful group of Roses, finely bloomed and remarkably fresh and bright; also a large group of Orchids and new plants. Among the former was a magnificent specimen of the lovely Dendrobium Devonianum with three long spikes of blossom; along with this were Vandas, including the whitish-flowered V. Denisoniana, Cypripediums, Odontoglossums, and Cœlogyne pandurata. The other plants consisted of Palms, new Dracæuas, Leptopteris Wilkesiana, varieties of Primula cortusoides, &c. Messrs. Rollisson, of Tooting, sent a large collection of Palms, Dracænas, and Orchids. From Mr. Denning, gardener to Lord Londesborough, came a collection of Orchids, among which were fine specimens of Cypripedium caudatum, a beautiful variety of Odontoglossum Pescatorei, Oncidium altissimum, Vandas, Trichopilia coccinea, and a large mass of Cypripedium barbatum. Mr. Bull also contributed an extensive group in which we noticed Sarracenia purpurea in flower, Palms, Cycads, Browuea erecta, numerous Orchids, and a large pan of Primula japonica, one of Mr. Fortune's introductions from Japan, having magenta Phlox-like flowers in three whorls, which are very showy, and the plant is stated to be quite hardy. Mr. Turner had a large group of Roses and Azaleas interspersed with ornamental-leaved plants. Mr. Wheeler, gardener to Sir F. Goldsmid, Bart., sent large specimen Heaths and other stove and greenhouse plants; and Mr. Ware a charming group of spring flowers, intermixed with hardy ornamental-foliaged plants—a group even more effective than those he has shown at previous exhibitions, striking as they were. From Mr. Williams, of Holloway, came a collection of Orchids, Azaleas, and fine-foliaged plants; from Mr. Wimsett, Ashburnham Park Nursery, Palms and Dracænas; and from Messrs. Veitch a collection of ornamental-leaved Acers noticed in the report of the last show.

Mr. Charles Noble, of Bagshot, sent a very striking collection of Clematises. Most of the varieties have been noticed in previous reports. Miss Bateman was again very fine. Mr. Needle, gardener to the Comte de Paris, again sent a collection of terrestrial Orchids, very interesting and creditable to his skill as a cultivator. Mr. Turner contributed a large collection of excellent varieties of herbaceous Calceolarias; and Mr. Osman received a second prize for a collection of cut Roses, there being a class provided for these.

Extra prizes were awarded to Mr. Turner for his collection of Azaleas, Roses, and Calceolarias; to Messrs. Veitch for Roses, also for Orchids, novelties, and Acers; to Mr. Bull for a miscellaneous group; to Mr. Denning for Orchids; to Mr. Noble for Clematises; to Mr. Wimsett for Palms, &c.; to Mr. Ware for spring flowers; to Mr. Wheeler for Heaths, stove, and greenhouse plants; and to Mr. Hooper for Pansies.

In the permanent horticultural exhibition, in connection with the International Exhibition, we must first pay a tribute to the incomparable excellence of Mr. William Paul's display, and especially the truly magnificent specimens of Roses. We will not enter into names, though each deserves notice, and the whole is exquisitely arranged. Along with the Roses are Pelargoniums, Conifers, and a variety of plants, which by their foliage or flowers lend variety to the scene. Messrs. Standish and Co., of Ascot, have a well-arranged display of Rhododendrons, Conifers, and other plants on the left of the entrance; and on the opposite side Messrs. Lane, of Berkhampstead, have a very lively bank of Azaleas, Rhododendrons, and other flowers, together with Conifers, &c. To neither of these collections, however, is justice done, owing to the centre of the entrance hall being otherwise occupied, but this we believe will be altered.

In the upper corridors Mr. Wills, of the Royal Exotic Nursery, Sussex Place, Brompton, has a group arranged for decorative effect, of which we cannot speak too highly. The flowers are arranged in large gracefully-shaped wire baskets, that accord in outline with a circular basket in the centre, which can be made to revolve for the purpose of exposing the plants equally to the light and for watering. Along with them are noble Palms, and the whole is backed with Conifers, &c., the front edged with Lycopods. It is an admirable arrangement, which does Mr. Wills very great credit, forming, as it does, quite a feature in the corridor in which it is placed. Messrs. Paul & Son contribute a group of Roses, Hollies, and other shrubs. Messrs. Sutton have a stand 50 feet long, containing upwards of two hundred kinds of garden and agricultural seeds, including those of several trees, together with specimens of different Grasses, Potatoes, and some remarkably fine agricultural roots. Messrs. Carter & Co. have also a stand which will also contain a large assortment of seeds, but it is not yet fully completed.

FRUIT COMMITTEE.—G. F. Wilson, Esq., F.R.S., in the chair. The Chairman announced that a highly meritorious dish of Uvedale's St. Germain Pears, sent to the last meeting of Committee by Mr. Ross, gardener to Charles Eyre, Esq., of Welford Park, Newbury, had been by mistake credited to Mr. Rivers, of Sawbridgeworth. The Committee, while regretting that this should have occurred, unanimously awarded them a special certificate. Mr. George Lee, of Clevedon, Bristol, sent a dish of finely-curled Parsley, which was unfortunately too yellow in colour. Mr. James Batters, gardener to J. W. Fleming, Esq., Chilworth Manor, sent two Queen Pines, and a tray containing excellent specimens of New Rivers's Ashleaf and Ashleaf Potato, and Little Gem Pea. The collection received a special certificate. Mr. Pizzey, gardener to Sir Erskine Perry, Bart., Fulmer, Slough, sent some fruit of a seedling Cucumber. Mr. Douglas, gardener to Francis Whitbourne, Esq., Ilford, Essex, sent a very handsome brace of Cucumbers raised from Blue Gown. It is in the way of Telegraph, and received a first-class certificate. It was named "Tender and True," the motto of "The Douglas." Mr. Green, gardener to Mrs. Honeywood, Mark's Hall, Kelvedon, sent a seedling Pine. It is a cylindrical-shaped, yellow fruit, weighing about 3 lbs. The flavour was excellent, and it was highly approved by the Committee; but as the fruit was evidently not in its best condition, the Committee recommended that Mr. Green should carefully preserve the variety, and exhibit it again.

Mr. Richards, gardener to Baron Rothschild, Gunnersbury, sent three bunches of Black Hamburgh Grapes, grown in pots in eighteen weeks. This was a very meritorious exhibition, and received a special certificate. Mr. C. Baldwin, gardener to B. Drew, Esq., Streatham, sent three bunches of Black Hamburgh Grapes, which were good, but deficient in colour. Mr. Temple, The Gardens, Balbirnie, Fife, sent a bunch of Lady Downe's Seedling Grape, cut in November last, and kept in a bottle of water. The Committee commended the flavour,

and ask for full information as to the manner in which they had been kept.

Mr. Stevens, of Trentham, sent a dish of each Black Eagle and Bigarreau Cherries, remarkable for size and beauty, to which a special certificate was awarded. Mr. Elcome, The Garden, Rhug, near Corwen, sent four dishes of Apples, consisting of Starmer Pippin (named erroneously Yorkshire Greening), Scarlet Nonpareil (marked No. 3). The flavour was entirely spoiled. Mr. Ford, gardener to W. E. Hubbard, Esq., Leonardslee, sent ten dishes of Apples and three of Pears, remarkable for the care with which they had been preserved, and the beauty of colour attained in the ripening. They were awarded a special certificate. Mr. Douglas, of Loxford Hall, brought branches of Peaches and Nectarines laden with fruit, taken from trees in pots wintered out of doors from October till the second week in January for the last eight or nine years, to show that the trees do not suffer from the exposure.

Floral Committee.—Dr. Denny in the chair. Mr. Green, gardener to W. Wilson Saunders, Esq., Hillfield, Reigate, sent a very interesting collection of plants, of which Eliseua longipetala, a Peruvian bulb, with heads of white flowers, had a first-class certificate, a similar award being made to Dyckia brevifolia, a Pine-Apple-like plant with dark green foliage. Other interesting plants in this collection were Leucocoryne ixiodes with pretty pale lilac flowers, and Streptocarpus Saundersii with small Gloxinia-like white and blue flowers. A special certificate was given for the collection. Mr. Parker, Tooting, sent Iris nudicaulis, on account of its rarity. Mr. Williams, Holloway, exhibited a species of Sobralia with a large flower of a delicate purplish lilac. It received a first-class certificate, as also Amaryllis marginata perfecta. A special certificate was given to Mr. Williams for a group of plants, likewise one for his fine example of Cochiostema Jacobianum with six beautiful panicles. Mr. Nelson, St. Michael's Hill Nursery, exhibited Rhododendron Princess Louise of Lorne, noticed in another column, and Mr. Woodward, gardener to Mrs. Torr, had a special certificate for a very fine specimen of Eria leucostachya with twelve racemes of flowers. Though few of the genus are of much value for ornamental purposes, the specimen shown was very effective and much admired.

Messrs. Veitch had first-class certificates for Agave festiva and Croton Johannis, a narrow drooping-leaved kind with rich golden variegation. They likewise sent a species of Asparagus with elegant feathery white flower heads, also a few other plants, of which the beautiful Filmy Fern, Leptopteris Wilkesiana, had a first-class certificate. A like award was made to Messrs. Rollisson for Gloxinia Rev. H. H. Dombrain, with drooping rich crimson violet-tinged flowers, very brilliant in colour. The same firm also sent several other varieties, some promising Azaleas, and Telopea speciosissima, the Waratah, for which a special certificate was awarded.

Mr. Bull sent Primula japonica and its variety lilacina, each of which had a first-class certificate. These very beautiful Primroses, very like a Phlox, were introduced from Japan by Mr. Fortune, and proved perfectly hardy out of doors at South Kensington last winter. It is noticed in the previous report, and it may here be added it was much admired by all who saw it.

Messrs. E. G. Henderson & Co. sent Epigynium acuminatum, with coral-like flowers, White Tom Thumb Ageratum, and several other plants; and Mr. Noble new Clematises—Mrs. Lister, white, tinged with purple at the base of the segments, was very pretty. Messrs. Downie & Co. had a first-class certificate for Tropæolum Mrs. Bowman, a very bright orange scarlet, seemingly of tolerably dwarf habit; also for Iberis gibraltarica (?). Mr. R. Wood, gardener to W. Kelloch, Esq., Stamford Hill, received a first-class certificate for Gasteria nigricans, said to be the identical plant figured by Haworth. A second-class certificate was given to Mr. Turner for Auricula Alderman Wisbey, and a similar award was made Mr. Masters, gardener to the Earl of Macclesfield, for Perpetual Clove Miss Joliffe. Mr. Masters also exhibited a box of Bougainvillea speciosa variegata, having yellow variegated foliage, and forming wreaths covered with splendid coloured bracts. This was surrounded with Ruscus androgynus, which had an excellent effect. A first-class certificate was given.

Mr. William Paul had a first-class certificate for Rose Princess Beatrice, and Messrs. Paul & Son one for Rose Earl of Eldon. A special certificate was awarded to Mr. Petch, gardener to Sam Mendel, Esq., for magnificent cut flowers of Phalænopsis grandiflora and other Orchids. Messrs. Barr & Sugden sent a remarkably fine collection of Narcissus, and Mr. Richards, Earl's Court Road, a number of plants of the ornamental little Begonia named after him.

General Meeting.—J. Bateman, Esq., F.R S., in the chair. After the usual preliminary business, including the election of eleven new Fellows, a list of donations was read, and the Chairman expressed his regret that there were not more of books, and invited a distinguished foreign horticulturist who was present (M. Canuaart) to use his influence in Belgium.

Mr. Wilson Saunders, having been requested by the Chairman to make some remarks on the plants he had exhibited, said he had lately employed collectors in Chili and Peru collecting bulbs, and those exhibited were some of the results. He then briefly commented on some of them, remarking that one was deliciously scented, and appears quite hardy. The Dyckia brevifolia was dwarf, elegant, and seemed likely to be useful as a decorative plant.

The Rev. M. J. Berkeley said, he ought to have said on the last occasion that the plant sold in the Bath markets for Asparagus was Ornithogalum pyrenaicum, not nutans. He then passed a high encomium on Messrs. Barr & Sugden's collection of cut Narcissus, all of which, as far as possible, were correctly named, and many of them rare and curious. The Vine disease at Melbourne, and the disease which had manifested itself in the Coffee in Ceylon, were ascribed to peculiar climatic conditions, these in the latter case having apparently entirely arrested development, especially as regards the albumen of the seeds, which was not one-half nor one-quarter developed. The Ceylon Coffee generally had two grains in the capsule, the true Mocha usually only one, though much of that sold as Mocha was not so.

The Chairman, after pointing out some of the most remarkable of the Orchids, took occasion to notice a case of these plants which had been sent home, and said they were not worth the expenses of carriage. It was perfectly useless to import from well-known localities, unknown countries must be ransacked, and those rich in bulbs were generally rich in Orchids. The star of the day was Mr. Fortune's Primula japonica, which Mr. Fortune first saw at a temple where he slept, but after trying in vain to import living plants and seeds he at last succeeded in 1861 in introducing it. The speaker gave an interesting account of Mr. Fortune's feelings on first meeting with the plant, and his troubles in securing its introduction, and concluded by stating that the plant had proved hardy near London.

This was essentially, as far as florists' flowers were concerned, a show of pot Roses. It was too late for Auriculas; and Azaleas, although presenting as numerous a variety as any collection of strictly florists' flowers, can hardly be designated as such. The pot Roses were as usual good, but to my judgment not up to the usual lead, while the collection of new varieties did not present any very remarkable novelties. This must of necessity for some time not present its usual features of interest, unless, indeed, our English raisers come to the front, and a fine seedling yellow Rose exhibited by Messrs. George Paul & Son seemed to indicate that such would be the case.

In the class for twelve new Roses of 1868, 1869, and 1870 Messrs. Paul & Son were first. The most noticeable of their plants were Earl of Eldon, the yellow already referred to, a seedling from Cloth of Gold, very bright and large, and promising well; Duke of Edinburgh—I think of all our high-coloured Roses none for pot culture at any rate can equal this; there is a brilliancy about it which none others possess to an equal degree; Reine d'Or, a very beautiful Noisette, which I was glad to see so good, as I have thought well and spoken hopefully of it; Edouard Morren, like many Roses this has improved since it was first brought out, and, while very large, does not seem so much to show the tendency to exhibit a green eye, which spoiled its appearance; Mdlle. Engénie Verdier, very pretty and useful; and Marquise de Castellane, bearing out fully the high position accorded to it. Mr. Turner, of Slough, was second. Amongst the best of his flowers were Jules Chrètieu, light pink; Adrienne Christophle, Edouard Morren, Dupuy Jamain, Marquise de Mortemart, Nardy Frères, Duke of Edinburgh. There were others whose only novelty was their names—Marquise de Ligneries, Louisa Wood, Baron Chaurand, and Comtesse de Hainault.

Auriculas, as I have said, were late, and the flowers generally wanted freshness. In the class for twelve, open, Mr. Charles Turner was first. His flowers were Read's Miss Giddings, a good useful grey edge, which I also saw well exhibited in Dublin; Leigh's Colonel Taylor, fine; Turner's Mrs. Fletcher; Lightbody's Robert Traill, grey-edged seedling, too much colour; Headly's Arabella, white edge; Turner's Jessica; Heap's Smiling Beauty; Headly's Richard Headly; Lightbody's Richard Headly; and Alderman Wisbey (Headly). There is a peculiar interest attached to some of these flowers. That veteran grower to whom we owe the best Auricula in growth, Headly's George Lightbody, has given up growing, and his collection, including his seedlings, has passed into the hands of Mr. Charles Turner, of Slough; among them are some fine grey edges. The best of those exhibited to-day was Richard Headly, but I hope Mr. Headly may be induced to allow this name to be altered. We are already confused with Hedge's Britannia and Smith's Britannia, Hogg's Waterloo and Smith's Waterloo, and when the varieties are really so few it is a great pity that the confusion should be made worse. We have a remembrance of our good old friend both in Lightbody's flowers and his own George Lightbody, which will ever make him dear to Auricula growers, let us be content with that. Mr. James was second; his flowers were Smiling Beauty, John Bright, Richard Headly, James's Model, Smith's Mrs. Smith, Countess of Wilton, Conqueror of Europe, Oliver's Lovely Anne, Hepworth's True Briton, Campbell's Lord Palmerston, and Warris's Union. In the class for six Mr. James was also first with Lancashire Hero, Richard Headly, George Lightbody, Lord Palmerston, and Smiling Beauty. The Rev. H. H. Dombrain was second with Robert Burns, Mary Anne, Chapman's Maria, Headly's George Lightbody, Lancashire Hero, and Fletcher's Ne Plus Ultra. There was also a nice collection of Alpines exhibited by Mr. Turner, including Queen Victoria, Fascination, Gladiator, Cygnet, Mercury, Fire King, and some unnamed seedlings; and by Mr. James, who had The Pet, Magnet, Phœbus, Black Prince, and Jubilee.

Mr. Hooper, of Bath, exhibited some fine Pansies, among which his Sunshine took the pre-eminence, good as a bedder and in a stand. He had besides Charles Felton, Mrs. Felton, Queen of Beauties, Sun-

set, Mrs. Laing, Cloth of Gold, Novelty, The Bride, and Cream of Creams, and amongst fancies, Princess Teck, Rob Roy, Purity, very beautifully edged, Jewel, Prince Leon, and Exquisite.—D., *Deal.*

GIANT POLYANTHUS.

Under the heading "Calcot," we twelve months ago gave an account of a visit we paid to this charming retreat, three miles beyond Reading on the Bath road. We were rather too late then to see the famed gardens of giant Primroses, Polyanthus, and Cowslips in their best condition, though we were amply rewarded for our journey by other objects of interest, which were remarked upon at the time; but we lived in the hope of being enabled this year to gratify a curiosity which was only deepened by what we had already seen, and by the expectancy in which we indulged. Our hope was not disappointed when last week we spent a day at the hospitable country box of Mr. Webb. The Primroses, Polyanthus, and Cowslips, and other spring flowers, of which there are really acres, were one mass of bloom, and such Polyanthus and Cowslips! They *are* "giants." They must be seen to be appreciated, for no description will suffice to give any idea of the size, and richness, and variety of these flowers. For another week or two these will be in the full splendour of their bloom, and we would recommend all who have the leisure and the opportunity to visit Calcot, where we will ensure them a welcome reception from the worthy proprietor.

Among other, and there are many, things to be noted here, we observed a large quantity of that rare bulb Narcissus (Ajax) cernuus flore-pleno, a beautiful double Narcissus, flowers of which Mr. Webb exhibited at South Kensington a fortnight ago, much to the delectation of lovers of this beautiful genus. Crocuses are grown by the acre, and Snowdrops by the mile, for there are lines and lines of the latter all over the place. The trees of Maréchal Niel Rose have multiplied since our last visit, till this lovely Rose salutes you in all directions. One notable fact we may mention, Mr. Webb uses no stable manure, but every leaf off his ten acres of Filberts is utilised. They are all gathered in the autumn and thrown in a heap. They are used extensively for hotbeds for Melons, Cucumbers, and other cultural wants, and when rotted to vegetable mould they serve as the only dressing the land requires.

STRAWBERRY FORCING.

The showers of the 28th and 29th ult. would be of great importance to the Strawberry quarters. We are sorry to say that our anticipations as to a shortness of bloom will be too well realised, though there will still be a fair crop, especially on the younger plants. The sunny days of the week gave a rich colour and flavour to Strawberries under glass. We lately stated we had done very well this season with pots on boards, without anything beneath them. Some we are obliged to keep in flats or saucers to prevent the drip injuring crops beneath them, for even in a lean-to Peach house we have at present four rows of Strawberries, some of them too shaded for setting, but fair for swelling. Being rather short of room, however, we filled several lights of a pit with pots, after the fruit had set freely, and we had thinned out at least two-thirds of it. These pots were set a couple of inches or so in a bed of decayed leaves, with just a little heat beneath them. Not seldom we have had fine fruit from adopting this plan, and allowing the roots to run into the bed from the bottom of the pot. The plants become more independent of the water-pot. Pots on boards, slates, or any hard substance, require more watering, but that watering gives nourishment though with more labour. We allude to the matter thus prominently because some beginners write to tell us, after what was stated lately about setting pots on a solid shelf, that they fear they will be wrong in plunging their pots in a decayed bed of dung and leaves. Well, the whole of our experience leads in this respect to two conclusions. First, that when Strawberry pots are set on turf, &c., or less or more set in a bed of decomposing material, it is best to manage so that the pot be not moved until the fruit is gathered; and, secondly, we prefer, as in the above case, that before Strawberry pots are put on or in a bed, the fruit should be first set and commencing to swell, whilst the pots stand on a hard bottom. By setting the pots on a bed at once, so enticing for the roots to enter, we have had good shows, and a remarkable growth of foliage, but the foliage seemed to steal what the flower-stems ought to have had. By delaying plunging the pots in such a bed until the fruit were set and swelling, the enticement given to the roots to go beyond the pot told more on the fruit than on the mere foliage. We advise, therefore, that a setting or plunging medium for a pot should be resorted to after the fruit is set. Even then it is doubtful if the hard shelf would not be quite as well, if varied weak manure waterings could be duly given. The safest artificial manure to use is a pinch of dissolved bones or superphosphate of lime over the surface of the pot—that is, as much as can be held between the thumb and finger—every week. Those who are more experienced can use anything; we use house sewage frequently, but we like to judge of its strength each time. A great point in watering, and especially in early forcing, is never to water over the bud or centre of the plant before or shortly after the flower truss appears. It is better in every way to sail the surface soil, leaving the central bud high and comparatively dry.

And again, as we are on this subject here are several inquiries. "Why don't you, and gardeners in similar places to yours, have a Strawberry house such as you described as existing at Enville years ago, and such as Mr. Ingram has at Belvoir?" Why? Just simply because we cannot help ourselves. There is no end to the disadvantages of having Strawberries as temporary crops in other houses. For one thing the Strawberry is a plant that is very sensitive to a high temperature. We need not enter further on the theory of insects, but it is quite evident that when a plant is placed in unnatural positions insects will soon show themselves in the way of retaliation. For example, we believe that many a vinery and many a Peach house would never be visited by that little pest the red spider but for Strawberry pots being placed in the highest, warmest, though the airiest positions, in places where the red spider will be the most encouraged to attack the leaves, sulphur fumes from walls, &c., notwithstanding. Then in all such houses the more shade, the more deficiency in setting, in colour, and in flavour, whilst freely exposed in a high temperature, the greater the likelihood of the red spider showing itself, and then it will not confine itself to the Strawberries. A Strawberry house, then, say we, where it can be had.—R. F.

NOTES AND GLEANINGS.

Proposed New Market.—Mr. Henry Meyers, the President of the Market Gardeners', Nurserymen's, and Farmers' Association, together with several of the other members, attended by appointment at the Guildhall the other day for the purpose of meeting the Market Improvement Committee of the City of London, and fully explaining the requirements of the market gardeners with reference to the great need for improved market accommodation for the disposal of fruits, flowers, and vegetables within the metropolis. Mr. Meyers stated that the growers had for many years been making applications to the agents of the Duke of Bedford to construct a roof over the whole of Covent Garden Market, and make other really necessary improvements; but no steps had yet been taken to meet the urgent wants of the public and the trade. Under these circumstances the growers were glad to hear that the Corporation of London contemplated certain improvements and alterations in the City markets. Some of the members had expressed an opinion that the site in Smithfield near the New Meat Market would be most advantageous to both buyers and sellers; yet, after taking into full consideration the central position and great width of Farringdon Street, the Market Improvement Committee appeared to consider that by means of a judicious outlay in altering the present inconvenient levels and approaches, giving ample means of ingress and egress, and constructing a light roof over the whole area of Farringdon Market, the latter would be a source of more profit to the Corporation, and within a few years would rise from its present unsatisfactory state to the position of a really first-class well-attended market. The deputation was courteously received by the Market Improvement Committee, who went into the discussion in a business-like manner, and it was ultimately agreed that a sub-committee from the Market Improvement Committee should meet a sub-committee from the Market Gardeners' Association, to discuss and arrange the necessary details required either for the improvement of Farringdon Market or the erection of a new market opposite the New Meat Market.

—— Farewell Dinner to Mr. Gough, of Lea Castle.—On the 24th ult. this tribute to merit was given by a considerable number of the principal gardeners of the district. Mr. John Gough for nearly eleven years was head gardener to J. P. Binon

Westhead, Esq., late M.P. for York, and he has retired from Lea Castle to take a similar situation near Hereford. It is only a few years ago that Mr. Gough was presented by the Foresters of Kidderminster and the surrounding district with a valuable gold watch and chain as a testimony of their respect, and more recently his late employer made him a free member of the Gardeners' Royal Benevolent Institution by paying a life subscription. His *confrères*, on hearing that he was about leaving them, quickly organised a dinner committee. Nearly fifty gardeners and others dined together at the Fox Inn. Councillor Hasell occupied the chair, and Mr. E. Bennett, head gardener to the Earl of Stamford and Warrington, Enville, the vice-chair. We have not space for the encomiums they passed upon him to whom the tribute was paid.

—— Among the plants which have received honour and religious veneration among the Hindoos, the Doob-grass (Cynodon Dactylon) holds a prominent place. Its usefulness, added to its beauty, induced them in their earliest ages to consider it the abode of a benevolent nymph, and it is employed in many of their religious ceremonies. It owes much of its honour to its great tenacity of life, being regarded as an emblem of immortality; and the Véda celebrates it, under one of its names, in words which indicate its supposed mystic origin:—"May *Durvâ*, which rose from the water of life, which has a hundred roots and a hundred stems, efface a hundred of my sins, and prolong my existence for a hundred years." The extreme rapidity of growth in this Grass is here referred to, and it is stated that, by merely chopping it in pieces and sprinkling these on prepared ground, a verdant sward may be obtained in a few weeks. The Dooh-grass is frequently introduced by name in the popular stories of the country, and the roots are esteemed medicinal.—(*Nature.*)

—— "Laurel Joe."—Caution.—Some time last year we cautioned the public against purchasing "rare" specimens of Ferns from an impostor known as "Fern Jack," who, by his clever artifices, succeeded in deceiving several collectors supposed to be "well up" in Ferns. We have now to caution them against purchasing at their doors of another vendor of plants—a boy, whom we will dub "Laurel Joe," as he deals chiefly in that popular evergreen. This cunning individual professes to sell young "Rose Laurel" trees, as he calls them, at a very cheap rate! The trees he offers are about a foot in height, in healthy condition apparently when sold, with their "roots" nicely covered up in moist mould, a little piece of the root protruding, however, to show that there is no deception! We have seen this week some of the Laurels sold by "Joe" to a lady amateur gardener. She was about to set the "shrubs;" but, previously to doing so, loosened the mould from the roots, when she discovered that she had purchased merely some cuttings of a species of Laurel, without any root of its own whatever! Each cutting had a slit at the bottom, which served to hold tightly a piece of any root which might be inserted previous to putting on the clay covering. The imposition is decidedly ingenious; but we advise the public, before purchasing "Rose Laurels" at their doors, to uncover the "roots!"—(*Brighton Herald*)

—— In the northern district of Alaska the various Grasses, which form an important portion of the vegetation, are woven into mats, dishes, articles of summer clothing, such as socks, mittens, and hats, by the Indians and Esquimaux. Mr. W. H. Dall states in his report upon the resources of that region, that in winter the Grasses are neatly tied in bunches, and shaped to correspond with the foot; they are then placed between the foot and the sealskin sole of the winter boots worn in that country. "There they serve as a non-conductor, keeping the foot warm and dry, and protecting it from contusion to an extent which the much-lauded moccasins of the Hudson Bay men never do. In fact, I believe the latter to be, without exception, the worst, most uncomfortable, and least durable covering for the foot worn by mortal man."—(*Nature.*)

NOTES MADE DURING A TOUR IN IRELAND.—No. 8.

POWERSCOURT, CO. WICKLOW.

Vines occupy a prominent position at Powerscourt. In the noble range of glass already alluded to, four houses or compartments, each about 50 feet in length and tolerably wide, are devoted to them. At the time of my visit their condition was in every respect admirable—nothing very sensational, but all good and promising. I had to note nothing very particular in the construction of the houses, or the general management of the Vines. All the latter were planted inside, and pruned and trained on the close single-rod system. Mr. Dunn, however, has had to do battle with one of the direst enemies of the Vine—the Vine Aphis, *Phylloxera vastatrix*. This dreadful enemy is but little known in this country. It has but lately, indeed, been brought under the notice of our scientific men. Long may we be spared from any closer acquaintance, for of all the terrible pests a gardener has to contend with, and they are manifold, "this bears the bell." The Vine aphis is a small sort of Coccus, producing gall-like excrescences upon the young shoots and leaves, as well as upon the roots of the Vine, and so completely paralyses its further progress. It spreads also with wonderful rapidity, so that where once introduced (and it is a foreign introduction), the whole house is almost doomed to destruction. In some gardens every Vine has been destroyed, and no possible cure has yet been discovered, excepting by the simple process of "stamping out"—*i.e.*, by the complete renewal of the Vines, soil, and all concerned.

It was, indeed, pleasing to learn that Mr. Dunn had at last got rid of it. That which seemed at one time, and to most people, almost a hopeless task, has been overcome by incessant perseverance in this way. All the Vines have been taken up, their roots thoroughly washed free from every particle of soil, the entire borders renewed, and then replanted. It is believed that thus it has been entirely overcome, and let us hope it is so. Looking at the Vines, which even after this severe ordeal are very luxuriant, not the slightest symptom is apparent. To Mr. Dunn we must, therefore, ascribe the credit of first being able to point out the way to us of conquering the Phylloxera vastatrix.

Taking a peep at vinery No. 1, planted about two years ago with Black Hamburghs, Royal Muscadine, Royal Ascot, &c., these were doing well, and promised a good crop this season. Vinery No. 2 is filled with a variety of Grapes for summer and autumn use, such as Madresfield Court, a truly first-class new Grape, Buckland Sweetwater, Duchess of Buccleuch, Chasselas Musqué, Mill Hill Hamburgh, Frankenthal, Trentham Black, &c. These were also but recently planted, but promised well for another year.

Passing on we enter another vinery, which is devoted to late Grapes, chiefly Muscats. These were bearing a good crop of fair-sized bunches of large and very evenly-sized berries of that deep amber hue, the Mint mark of ripe Muscats. Some Frankenthals and Alicantes were likewise good. The Muscat Hamburgh, however, was a failure, and it has so far disgusted Mr. Dunn that it is to be replaced with Madresfield Court. In yet another vinery was a splendid assortment of late sorts, all bearing a good heavy crop. The fruit in this house was intended for use in February, March, &c. The sorts mostly relied on and esteemed are Lady Downe's and Trebbiano. The Barbarossa (Gros Guillaume) and West's St. Peter's find no favour here, and are to be discarded. It is singular how tastes differ, the latter variety being in my opinion one of the most pleasant-flavoured of Grapes.

Mr. Dunn manages to keep his Grapes until very late in spring—Trebbiano until the beginning of April, and Lady Downe's last year until the middle of May. The French system of cutting the Grapes and keeping them in the fruit-room, by inserting the end of the stalk in a bottle of water, has been tried here pretty extensively, and found to answer fairly. Some Grapes cut in November have kept good until March; not quite so well as those left on the Vines, nor is the flavour found so good. It is, however, a practice recommended when the vinery is required to be used for another purpose, which would endanger the keeping of the fruit on the Vine.

Glancing now at the flower garden in the immediate front of the houses just noticed, and enclosed on the other sides by high walls covered with Arbor-Vitæ, Laurels, and Ivy, we have certainly one of the stiffest and ugliest sights of Powerscourt, about an acre and a half of gaudy colours—scarlet and yellow, yellow and scarlet. It is a garden of the old geometric Dutch style, numerous small beds on gravel with Box edgings, requiring an immensity of plants to fill them, and endless care. So far as it could be made beautiful it was done so by Mr. Dunn. It was gratifying to me to learn that it is intended to sweep it away at an early date as soon as the terraces, now in course of formation, shall have been completed. These terraces lie on the south front of the mansion, by which they will be completely overlooked. Judging by what has already been done, although it is dangerous to speak of half-finished work, they will be very grand. Naturally the ground and situation favour

their construction. If carried out in the spirit they are at present conceived, there will be few places to compare with them.

It is somewhat difficult to give an exact idea of the true character of the place. I took my position on the top terrace in front of the mansion, which is over 600 feet in length, and about 60 feet wide, supported in front by a rustic ashlar granite wall of ornamental construction, with niches here and there for statues, and surmounted with numerous marble vases and urns, alternating with a great number of large light-grey granite balls on handsome pedestals of the same stone. These, I was told, were all cut and dressed on the spot by native Paddies, and they do them credit. From this terrace, then, the ground slopes rapidly for a distance of about 900 feet to a small lake about 100 feet below, and it is on this ground, therefore, where, as at present proposed, will be formed five great terraces, with a walk in the centre, 44 feet wide, leading from the mansion to the lake, over the successive terraces, by noble flights of dressed and moulded granite stairs, ornamented with vases, statues, &c., numbers of which are already waiting to be unpacked. The upper terrace is the only one finished; it is chiefly gravel, and the principal flower garden will be on the third or middle terrace, having an area of about 4 acres, and nearly 50 feet below the level of the drawing-room windows, from which a complete view of the whole can be obtained. The extent of the terraces will be about 12 acres; the top one, as stated, supported by a granite wall, the others by grassy slopes curving outwards at the ends, and gradually dying away into the surrounding pleasure grounds. When completed it will unquestionably be very grand—one of the grandest terraced gardens in Ireland; but, with all deference to Mr. Dunn, or whoever the designer may be, I am of opinion that fewer terraces of a greater width, say three, would have a far more commanding effect. The lake, too, sadly wants extending and improving to make it in character with its surroundings.

The Dargle, and the Glenislorane Stream.

The view in front is one of the grandest that can be seen, wood, water, hill, and dale lending their aid to fill in as pretty a natural picture as one could wish to look upon. From the terraces the view sweeps down over the lake, the rich green meadows, and bosky dells, to the vale of the Dargle, then opening wide and stretching up the hill sides beyond, over more charming woods and meadows, rising higher still into scanty pastures, and furze, and heather, until the view culminates in the bare rocky and precipitous peak of the large Sugar-loaf Mountain, standing out grandly and prominently in the clear blue sky, and supported on either hand by lower peaks, but quite as rugged and picturesque—such a sight as can only be seen in Ireland.

Near to the east end of the upper terrace is the old churchyard of Powerscourt, the resting place of the Powerscourt family. The old church, in ruins, is finely covered with a collection of Ivies. Leaving the terrace, we turn down a winding walk through a beautifully undulating glade, which is very judiciously planted with the choicest hardy trees and shrubs, especially Conifers, in which Powerscourt is particularly rich, nearly every variety having at one time or other been planted, and in great part they have succeeded well. Amongst the more striking we note Cedrus atlantica, growing very vigorously, Pinus insignis, so delightfully green, P. excelsa and Cembra, Abies Douglasii, Wellingtonias, Araucarias, Picea Pinsapo, cephalonica, Nordmanniana; Thujopsis borealis, 12 feet high; Cupressus of sorts; many fine plants of Magnolia grandiflora, conspicua, glauca, macrophylla; Skimmia japonica, Skimmia oblata, Raphiolepis ovata, Ilex Fortunei, Quercus glabra, and many more too numerous to mention, but all extremely interesting. Here we come to a great clump of Berberis Darwinii, covering the slope of a prominent knoll, and it must look charming when in flower. Then at the bottom is a magnificent clump of Pampas Grass just coming into bloom. How very effective is this plant when grouped in such situations! yet it has one serious drawback by coming into flower so late. In this respect the Arundo conspicua is a decided advantage, as it flowers much earlier, although it is not quite so handsome. At Powerscourt the Arundo is the more esteemed, and it seems to thrive well.

Strolling on down the glade we pass some recently-planted groups of Rhododendrons, where they will no doubt do well, and winding along the bottom of the pleasure grounds we come suddenly upon a lovely dell some 30 feet below us, and stretching away are woods and grassy slopes down to the Dargle. The upper part of this, until three years ago, was a swampy thicket and peat bog, but was then cleared, drained, and formed into a very excellent American garden, for which it is particularly well suited. This is a charming spot, for which Mr. Dunn deserves especial thanks. A gracefully curving walk runs round it, and crossing a small brook by a rustic oak bridge ascends again to the level of the lake at the foot of the terraces. All sorts of Rhododendrons, Azaleas, Heaths, and Aucubas are there planted, with every attainable variety of Holly, interspersed with neat-growing Coniferæ in great variety, and many other plants of ornamental character.

At the upper part of this American garden is an interesting and curious rockery and fernery, the rockwork being entirely of tufa, rising up in a rugged, natural manner in pillars, arches, and buttresses to about 20 feet high, and pierced again by caves and narrow winding passages. Supplied from the lake above there is at one end a small waterfall, which, splashing over the rocks in its descent, gives a cool and refreshing appearance. As a rockery it is pretty, but to being a fernery it cannot lay much claim. It is bare, although there were many pretty rare species upon it.

Ascending again from the rockery by a long, winding, rustic stone stair to the pleasure grounds, on our right hand is the

lake, and beyond, the new terraces rising up to the mansion, which is seen from here to great advantage. On the left are groups of the Piceas, planted on the crest of the slope; these, when grown up, will form a pretty feature in the landscape. A piece of ground finely sheltered was here being prepared for a collection of hardy fine-foliaged plants, such as several of the Palms, Bamboos, Aralias, especially Sieboldii, which is a fine hardy plant here, Phormium tenax, &c. A little farther on is a fine example of Cupressus macrocarpa, upwards of 40 feet high. This is decidedly one of the most ornamental of Conifers, and particularly well suited for the climate of Ireland. Still following the winding walk along the lower part of the grounds, I noticed a very reverend group of Scotch Firs, and dotted over the lawn many fine, healthy, young Conifers, which are far too numerous to mention.

A little further on we reach the level of the upper part of the pleasure grounds from which we started. From here to the south-west there is a delightful view of the upper part of the Dargle Vale, Glencree, and the Wicklow mountains. A little eastward we reach a rustic summer house, from which there is a lovely view of sea and land over the vale of the Dargle to the church spires of Bray, and far out to sea in a straight line towards Holyhead. On the left from this point is a long noble terrace, the western end of the new upper terrace in front of the mansion. This is bounded on one side by a fine row of Wellingtonias, about 16 feet high, in the rudest of health, and the situation is very high and exposed. Five years ago these trees seemed doomed to die. They all exhibited signs of sickness, and several died outright. On examination it was found that their roots were literally white with fungus, proceeding from the remains of the roots of some old Elm trees which had stood there previously and had been left in the ground. To save the remaining trees, Mr. Dunn resorted to the bold experiment of taking up each tree, pruning off every infested piece of root, shaking away every particle of soil, and even washing the roots to make doubly sure, trenching over the ground, and carefully picking out every piece of root or stick, and replanting the trees in a few loads of fresh soil to start them. Year after year since then they have improved, and are now as healthy as need be. Is not this a lesson to those who believe not in the evil effects of fungus at the roots of trees, and its being caused by decaying pieces of roots, sticks, &c.? Mr. Dunn's success in clearing the fungus from the Wellingtonias led him to adopt the same method in order to battle with the Vine aphis, and with happy results.

Near this, on the way to the kitchen garden, are many more Conifers of the rarer sorts—Picea grandis, Picea nobilis magnifica, both very fine; Cupressus cashmeriana, very elegant; Thuja elegantissima, truly elegant; two very handsome plants of Thujopsis dolabrata and T. lætevirens; Retinospora filifera; a fine row of the pretty Thuja aurea; and a fine line of very symmetrical trees of Cryptomeria japonica about 25 feet in height. Here also were fine plants of Aralia Sieboldii, quite a hardy evergreen, Chamærops excelsa, Bambusa gracilis, Aucuba japonica loaded with berries, numbers of Camellias doing well, Indian Azaleas, Osmanthus ilicifolius, Quercus glabra, a fine evergreen, various kinds of Arbutus, &c. In the centre of this lawn there is a pond full of Water Lilies, with a fountain throwing water to a height of 50 feet. This is surrounded by a group of dolphins, spouting from their nostrils water which falls in spray over the surface of the pond, producing a very pretty effect.

Entering now the kitchen garden, a square of about two and a half acres, surrounded by high walls, one is compelled to say, that well cropped though it is, it is far too small for Powerscourt; so I was pleased to hear that a new and more extensive kitchen garden is being prepared, and Mr. Dunn will then be able to do vegetables that justice which they deserve. From the fountain just noticed runs a straight path through the centre of the kitchen garden and flower garden up to the centre front of the conservatory. This walk was planted with flowers ribbon-fashion, and they were very effectively and well arranged, and hidden from the kitchen garden by a high wire trellis. Various arches of Roses also are thrown over the walk, presenting a beautiful vista. The new kitchen garden, which is in course of formation, is very conveniently situated, and, judging by the fine crops of Peas, Onions, Asparagus, Sea-kale, &c., which I saw growing there, it will be found very suitable. Adjoining this is also a field of about four acres, which it is intended to plant with all the best sorts of fruits suitable for Ireland, which it shall be my duty to inspect at some future day.

Powerscourt is one of those magnificent establishments that require to be seen to be thoroughly understood. Turn we this way or that, there is something fresh and interesting, and the whole is so well cared for in a gardening point of view by Mr. Dunn, that there is no room to criticise, and continual praise is insipid. After partaking of Miss Dunn's kind hospitality I had to bid my friends adieu. Crossing the Dargle by an ancient and inconveniently narrow bridge, driving down the south side of the valley and through the famed gorge of the Dargle, the Paradise of the Dublin holiday folks, admiring much the rich scenery of rock, wood, water, hill, and dale, I was again at Bray.—B.

WORK FOR THE WEEK.

KITCHEN GARDEN.

Prick out seedling *Brussels Sprouts*, *Broccoli*, *Cabbages*, and *Cauliflowers* as soon as sufficiently large to enable you to do so. Watch *Beet*, *Carrots*, *Parsnips*, and similar crops, and see that they do not fall a prey to snails and slugs as soon as they appear above ground, for the crops often fail from this cause, and the seedsman is blamed for not supplying good seeds. Where the attack has commenced, sow a quantity of soot and lime mixed together over the crops attacked; the best time for doing this is either at dusk in the evening, or early in the morning. *Cauliflowers*, *Cabbages*, and *Lettuces* which have been forwarded in heat must now be transplanted finally, and attended to with water should the weather prove dry. Thin-out *Parsley*, *Spinach*, *Turnips*, and all other advancing crops, and where *Potatoes* are above ground in the open quarters, as is now the case with all forward sorts, have the ground between the rows forked-up at least 1 foot deep, which will prove of great advantage to the crop. Water advancing crops of *Cauliflowers* with liquid manure, either using the drainings from the dung heap, or guano dissolved in water at the rate of 2 ozs. to the gallon; draw a little fresh soil to the stems of the plants after the operation.

FRUIT GARDEN.

Continue disbudding and thinning the young wood of Apricot, Peach, and even Plum trees, and retain no more wood than can be laid-in without crowding. One well-ripened branch which has been exposed to sun and air is worth six that have been huddled together, and, consequently, are ill-matured. Thin the fruit of Peaches and Nectarines where too thick, leaving double the number required for a crop till they are stoned, when they must have their final thinning.

FLOWER GARDEN.

The bright, beautiful, and varied hues of lovely green now worn by trees and shrubs, and the fresh verdure of the lawns, render this a delightful, most enjoyable month. To the gardener it is full of promise, but he feels some misgivings as to the visitations of destructive insects, vaguely denominated blights, and remembers that the aphides sometimes produce "sixteen generations in one season;" therefore, watch carefully for their appearance. Keep all worked Roses free from suckers, which are now produced in great abundance. Let order and neatness prevail. Finish clipping Box. Pay attention to plants now hardening for bedding-out, let it be accomplished gradually. It is not safe to commence bedding-out tender plants before the middle of the month in the average of localities. Let, however, all preparations be made for the busy time. Determine your plans as to heights and colours; pay attention to the arrangement of the latter. A flower garden may be richly furnished with plants, but be very ineffective if the colours are badly arranged. For producing brilliant effect in masses reject parti-coloured flowers; such are never effective. Use pure and decided colours, such as brilliant scarlet, pure white, deep purple, and bright yellow; those which are in close affinity spoil each other. Too little attention is paid to this in articles of dress and furniture, otherwise we should not see so much bad taste in these matters. Take care not to mix plants whose bloom is of doubtful duration with those of a more permanent character, remembering always that the beauty of a formal flower garden depends upon its being in all its details a perfect work of art. There must be high keeping, symmetry, and a judicious arrangement of colours, otherwise it will not form a satisfactory whole. Young gardeners should attend to this. Many persons plant their stock so thinly that their beds are not covered till late in the season, I advise thick planting for speedy effect. Where walks require to be re-gravelled, it should be done previous to dry weather setting in, and roll frequently. Where annuals are required for late flowering they may yet be sown. Transplant tender annuals

from their seed pots and beds; also transplant Dahlias, remembering to use caution as to frost.

GREENHOUSE AND CONSERVATORY.

Many of the most forward Azaleas which were stopped some time ago will now be breaking again, and, if necessary, this is the proper time to give a second shift. Stop those which require it, and still persevere in maintaining a moist growing temperature, and shade for a short time in the middle of the day when necessary. All Azaleas, as fast as they are out of bloom, should be taken into heat to make their growth, syringing them copiously, and supplying them liberally with manure water. Encourage Camellias and Orange trees to make a sturdy free growth by frequent syringings, supplying liquid manure, heat, and an abundance of air on suitable occasions. Continue to thin-out Heaths and New Holland plants as much as possible, especially all late-flowering plants, or such as have already flowered, and young stock required for another season, by placing them in the cold pits or frames; while there encourage their growth by timely shifts, and to those which are not to be repotted but are now making their growth and have their pots pretty full of roots, apply liquid manure with moderation. Pinch-back in due time luxuriant-growing shoots to produce a regular and sturdy growth.

STOVE.

Follow former directions as to airing, watering, &c., and use every endeavour to keep a moist growing atmosphere at all times. Plants of tender foliage, such as Clerodendrons, Aphelandras, &c., will require shading for an hour or two on bright days, but do not give them any more than is absolutely necessary, but rather endeavour to bring the plants up hardy by affording them plenty of air, of course always avoiding cold draughts. Attend in due time to those plants which require potting, and ply the finger and thumb vigorously in the case of plants of a rambling or loose habit, so as to render them compact and bushy.

FORCING PIT AND FRAMES.

See that the growth of Balsams, Cockscombs, Globe Amaranths, &c., is duly encouraged, and another succession may be sown.

PITS AND FRAMES.

Attend to Zinnias, Rhodanthe Manglesii, Martynia, and other tender annuals which are pricked out in slight hotbeds or pans. See that air is admitted during calm, warm days. Expose them by degrees to the influence of light and air by drawing off the lights. Dahlias, Salvias, and all plants intended for flower-garden decoration should have the same treatment; by thus inuring them to the weather they will be better able to withstand it when planted out in a more exposed situation. Be sure that the flower garden climbers in pots are not getting into confusion through want of staking and tying. Have a keen eye after thrips; as this active little insect commits its depredations during sunshine, give the plants at mid-day a good syringing with water in a clear state mixed with soot, soft soap, and a little quicklime. Shut the pit close after syringing, and throw a thin covering upon the lights for an hour or two; by continuing this for a few days the enemy will soon be driven away. A piece of rich ground should be prepared forthwith for a plantation of Neapolitan and other Violets for winter forcing, and as soon as it is ready it will be necessary to take either the young rooted runners or to part the old roots to plant it with. The ground must be made very rich and light by manuring either with leaf mould or some perfectly decayed hotbed dung, and each plant must have a foot square to grow upon. After they are planted give a good soaking of water, and shade until the plants begin to grow, after which the only attention necessary is to keep them clear of weeds, and to remove the runners every second or third week, and also, if the season is dry, to give them a good soaking of manure water. A sunny situation must be chosen to plant them in, as what we desire for forcing or winter blooming is early and well-matured growth.—W. Keane.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

In most gardens it is a mere waste of physical power to keep *men out of doors in very wet weather*. With proper management the wet day is always the busiest day, as there is so much to be done in-doors, left often rather long for a wet day to come. We have mowed with the rain running down our back and gurgling out at the tops of our boots, but what was the good of it? After such a day, and such a drenching, with little chance of drying clothes, not to speak of future evils of rheumatism, &c., what good could men do in the following day and days? All such work in most gardens is downright waste. The mere physical human machine, to do its best merely as a machine, must be cared for like other machinery. We have no idea of garden men being looked upon as mere bags of sugar or salt that a little rain would soon melt, but we can confidently say after long experience, that in gardens of any great extent, if the men are often soaked at their work, it will say as little for the forethought of the gardener as for the advantage of the gentleman who employs them. There must be strange management if there is not plenty of dry work in a wet day, and then when the dry day comes the dry work will be done all the better, if the workman is regarded merely as a machine, and still more when he feels he is treated not merely as a sentient, but a moral agent. Even in this respect a little kind seen-sympathy will do much more than mere pay and the finest high-flown lucubrations on social economy and political philosophy. We have not seldom witnessed horses carefully kept at home in very rainy stormy weather; machinery, steam and otherwise, carefully cleaned and kept free from dust and moisture, and men turned out to do the best they could; but if without some light rain-proof material in the way of clothing, such a system was worse than a mistake if other work could be found.

Partly owing to the clearing away of hedgerows, reducing plantations, and free draining without any attempt to save the drainage water, water will become of such importance that every young man, on taking a gardener's place, should make specific inquiries as to the *water supply* for the garden. Those who have never experienced it can form but little idea of the constant anxiety when, during the summer months, the chief concern is with how little water you can manage to keep plants alive. Before the late rains our chief reservoir had been empty for a week. There is no little labour involved in carting and then carrying all that is wanted even for houses, especially when you must go miles to procure it. We are taking means to greatly increase our supply by saving what falls from the sky and storing it for use.

The above advice is founded on the simple fact, that so long as the dry weather lasts and there is a great scarcity of water, the gardener may meet with sympathy, but the previous dryness and the inevitable results are too apt to be forgotten when the rains come. True, shortness of water teaches us many lessons, among others the impropriety of constant or even additional watering; but no scheming will enable us to dispense with watering altogether, and especially in the case of pot plants. Another lesson may also be learned, and that is, not for a first saving to have spouting and conduit pipes too small. We have had 2-inch pipes in use when we wished afterwards they had been 3 or 4 inches in diameter. The small pipes and small spouting would do very well in gentle, even continuous rains, but the heavy downpours fill the tanks and reservoirs, the small pipes cannot take the water away, and there is, therefore, overflowing and waste. We think that for conveying the water underground iron pipes are best, well fastened at the joints. The next best are hard-burned, glazed, earthenware pipes, well cemented at the joints. We have seen many used merely mortared at the joints, but that is a bad plan when you wish to collect all the water possible. Soft-burned, unglazed, earthenware acts too much like an open drain for getting rid of instead of conveying the water. These are matters which lose all their importance when plenty of water can be obtained with but little labour.

Cauliflowers.—Of two rows under hand-lights, averaging five plants a-light, a trench was dug out between and on either side, and the strong plants well earthed up, the outside plants being squeezed outwards a little to give them more room, and the glasses, where necessary, elevated a little more than the bank or ridge, to allow the plants more room to get out. By elevating the row in a ridge, as stated above, we often allow the glasses to remain on the most forward so long as they can get breathing room inside, as thus they are more forward. Not only do we put the top glass down firm in the early part of the afternoon, but we place a piece of old mat over the glass from evening to morning. By this means we generally have fine Cauliflowers early. For succession, whilst we pay this attention to one row we leave the other exposed, so that it just begins to come in as the first is about over. Besides these, we have two lots of spring-raised plants, and one more ready to go out, the first two strong and healthy. We have tried many means of getting Cauliflower early, such as potting, repotting, keeping n cool

houses, &c.; but after all we have never succeeded better than by the old hand-light system, putting nine small young plants under a hand-light in October, keeping them hardy all the winter, protecting them from severe frost—those referred to had no light for a fortnight or three weeks after they were gently frozen—thinning to four or five in spring, and then encouraging free growth by rich and kind treatment. Even when Broccoli is plentiful, Cauliflower white and compact has a richness of its own in May. Sometimes, when they head faster than we want them, we use some of the fine heads from these winter-standing plantations for preserving, pickling, &c., but in general we depend on the first spring Cauliflowers sown in a mild heat, and forwarded a little under protection for that purpose. Two things, we often think, conduce much to the goodness of the winter-preserved Cauliflowers under hand-lights—first, using young small plants and rather late planting, so that the roots are working before the cold of winter comes; and secondly, the giving them at first otherwise rather starving treatment, such as well-pulverised soil, but with little dung, especially near the surface. To aid in this, as well as keeping slugs at bay, we often use a surfacing of rough clean drift sand—a material the slimy tribe are all much more averse to traverse than even rough coal ashes. Broccoli and early Cabbages will be so scarce with us that we must do a little extra to get the Cauliflowers in. We have had many cuttings from the shoots of Brussels Sprouts, Scotch Kale, and Cottagers' Kale; but perhaps the most useful of all have been the young shoots of the Buda or Asparagus Kale, well named Asparagus Kale, as they have a richness all their own. Spinach is also more appreciated than it generally is with us, as it is easy to gather a large basketful of it now.

In the somewhat general scarcity of spring vegetables allow us heartily to recommend the *Sea-kale in its natural condition* at this early season. We even consider it superior to the finest blanched heads. Where much is grown there will be a good deal of what was not forced now pushing and showing its close flower heads like the shoots of Purple Sprouting Broccoli. Cut these with the flower in embryo when 5 inches long, wash, and put in boiling water, with a pinch of carbonate of soda in the water, and the vegetable, with the usual boiling, will turn out a beautiful green, and be as soft and sweet as marrow. It is in our opinion richer and sweeter than even the young shoots of the Asparagus Kale; in fact, sweeter and more mellow and soft than the blanched Sea-kale, except that which is forced early in winter, as generally that forced, or rather blanched, out of doors in April is more hard and stringy. Some time ago we alluded to the large flower heads of the Sea-kale being used, and how partial many people were to them. They are far inferior, however, to these little short shoots with the flower heads showing at the point of them. We have seen barrowloads—nay, in our time cartloads, of such flowering heads taken to the rubbish heap to rot. It would not injure the plants a bit, rather the reverse, to nip out these shoots showing for bloom now; and we trust some of our lady readers will give them a fair trial and report the result, and if, as we feel confident, the report be favourable, the Sea-kale may be looked upon as a hardy vegetable, useful, not merely to force and blanch, but to use when young in its natural state. To our taste it is superior even to a crisp young Cabbage, and far sweeter and crisper than Purple Sprouting Broccoli. Even the stalks were as soft and sweet as the leaflets. We would, however, advise that the pinch of soda should not be forgotten—half a teaspoonful to a little dish. We are here going out of our right track, but we like to see vegetables soft and green, and not yellow with hard ribs in them.

Fortunately, before the rains of the 28th and 29th ult., we had sown our second lot of winter Greens, the first being up, our main crop of Scarlet Runners, and successions of Kidney Beans; also Peas, Turnips, Radishes, Lettuces, Cauliflowers, as where there is little room it is always advisable to sow often, and have very frequent successions. Besides red-leading, all the smaller seeds had a dressing over them of charred refuse. The more recently that has been made, so as to keep the smell of smoke and burning about it, the more will every sort of intruder keep at a distance from it. Than this there is no better lightener of stiffish soil, and in old gardens becoming effete by constant manuring as well as never-ceasing cropping, it acts along with a dressing of lime as one of the best renovators.

The most forward of the *Cabbages* raised in a slight hotbed in spring, pricked out under glass, and then planted with little balls, will not be so very far behind the few that remained to us of our autumn planting, but they, with all the extra care, will be much later than usual. The results of the last winter would show the importance of having a bed of young plants in reserve, for though we have had fine early Cabbages for many years from sowing in July and August, such a winter as the last would show that fine early plants are not to be depended on. Even now we think our plants would have stood the frost if they had not been enervated by the perfect clouds of flies that settled on them, and pretty well poisoned them in the autumn, notwithstanding all the means taken to clear them. It is well to know, however, how soon plants can be forwarded from spring sowings when a little extra heat can be given. One year, and in about one night, grass mice and rats together cut down every Cauliflower plant we had in the beginning of March, and, unfortunately, Cauliflower plants were very scarce that spring. We sowed directly in a slight hotbed, pricked off 2 inches apart as soon as the plants could be handled, still in the mild hotbed, then some 5 inches apart in light, lumpy, rich compost, lifted with good balls, and turned them into an earth pit, where some old sashes were placed over them, and air given very moderately, except in fine warm days, when the sashes were freely tilted or lifted off, and we thus gathered at the usual time in May and June, but at a considerable expenditure of care and labour. By such a system some of our stubbier shorter-leaved Cauliflower might be brought in very early; but in common circumstances it would not be valued so long as in common seasons we get such nice Broccoli in May and June. In such a season as this, where, as in this neighbourhood, there is little or no Broccoli, such a slight forcing of the Cauliflower would be a matter of importance.

Heat of a Mushroom Bed.—In order to obtain Mushrooms quickly in a house newly repaired, and the repairing of which threw us back later than we wanted, we spawned and earthed a bed sooner than we have generally recommended. After spawning and earthing, the bed heated rather more than we expected, rising above 100°, instead of being from 80° to 90°. As we had commenced another bed we let it take its chance, merely keeping the bed rather cool by admitting air, &c. We have had a very good return from the back and the front of the bed, but in this bed, from 3½ to 4 feet in width, for about 18 inches in width along its centre we have scarcely had a Mushroom. Here the heat would be the greatest. Both back and front produced very freely, but we do not expect the middle part will do any good. A lady told us some time ago that the greatest benefit she derived from the Journal was from studying the honest details of failures and want of success. But for the short time of extra heat, we have no doubt our bed would have been uniformly covered all over. With a greater heat still, the whole bed would have suffered. As on the whole we had plenty of Mushrooms, we might have said nothing about the unproductive part along the centre, but then we should have let slip a strong argument to beginners to beware of too much heat. The great majority of failures in Mushroom beds arise from overheating the spawn. But for our wishing to have Mushrooms as quickly as possible we would not have earthed our bed for a week or so; and then, if after spawning the bed threatened to become rather warm, we would either have removed the spawn for a short time, or left it exposed on the surface of the bed until the bulk of the bed was no warmer than new milk. A little watchfulness is the chief requisite for insuring uniform success with Mushrooms.

ORNAMENTAL DEPARTMENT.

Waving other matters we intended taking up, we may merely state that our chief work among plants has been potting and cleaning Ferns, planting out temporarily and hardening off bedding plants; but except resorting to contrivances several times adverted to, there is little or nothing which has not previously been referred to. Such dripping weather as we have lately had will do good if it only convince some people that a large lawn is a large expense. Strange to say that people who begin to look at the expense of a garden will think nothing of their many acres of lawn, and yet think that an acre or two of kitchen garden must do more than wonders. Much might be done were it clearly understood that nothing is more expensive than short grass well kept.

Where there is a scarcity of room, and much display is wanted in summer, all plants with bulbs, corms, or tubers, many Begonias, Gloxinias, Caladiums, Gesneras, &c., that remain torpid in winter, are extremely useful. For instance, we have never had the *Gesnera zebrina* so fine as when kept under the not-too-dense shade of Vines, until it showed its flower-stems. We have

also had it very fine in pits, the glass shaded with a coating of milk, with just a little powdered whiting in it, a little air being left on at night as well as by day; but if ever the sun touch the fine foliage with condensed vapour on it, farewell to all your previous care, the foliage will be spotted and marred, and the plants totally unfit for gracing a lady's bower. Hence a roomy house partially shaded is better for this plant than a pit, as in the latter a very short time of neglect will spoil the look of the plants for the season. The tubers should now be got out, and placed shallow in pans, to start them into growth, and then they may be regulated according to their strength. Five good tubers will make a gorgeous mass in an 8-inch pot. We have had fine plants from a single tuber in a 5 or 6-inch pot. Good fibrous sweet loam, with about one-fourth of old dried sweet cow dung, lightened with silver sand and bits of charcoal, will grow this plant to perfection. When fairly started it should never be syringed nor watered overhead. As hinted above, the sun should never reach a leaf before the leaf is dry. The less moisture on a leaf at any time the richer will be its velvety texture and colour.—R. F.

TRADE CATALOGUES RECEIVED.

James Brooke & Co., 16, 18, Victoria Street, and Fairfield, Manchester.—*Catalogue of Select Orchids, Palms, Ferns, Nepenthes, Vines, Pines, &c.*

John Scott, Merriott Nurseries, Crewkerne, and Yeovil, Somerset.—*Flower Garden Annual, Directory, and Catalogue of Bedding Plants.*

T. Bunyard & Sons, Maidstone and Ashford.—*List of Bedding-out Plants, Greenhouse Plants, &c.*

TO CORRESPONDENTS.

Books (*Salop*).—"The Vine Manual" and "Pearson's Orchard House." You can have the first-named for 2*s* 8*d*., and the second for 1*s*. 7*d*., free by post from our office, if you enclose the amount in postage stamps with your address.

Address (*V. N*.).—We believe the firm is Messrs. Handyside.

J. Coombs, Enfield (*J. H G*.).—We cannot give you more information than is in the advertisement, and cannot say why your letters were returned.

Distorted Shoot of Ash (*Ash-shoot*).—It is not an uncommon malformation, and when thus flattened and widened it is termed "fasciated."

Rhododendron Princess Louise of Lorne (*J. Nelson*).—It is a very fine specimen of a very handsome flower. The colour is purplish rose with purple spots in the throat; each flower is of good substance, 3 inches in diameter, and the truss fully 18 inches in circumference. We should have thought it must have been from a large vigorous tree, and not, as you say, from a small plant in an 8-inch pot.

Summer-pruning Wall Fruit Trees (*A New Subscriber*).—The short summer-pruning, as given in the "Modern Peach Pruner," may be applied to Plums, Pears, and Cherries as regards the growing shoots, but the spurs must not be interfered with, nor the shoots that are required for extension. The shoots stopped will, in autumn, require to be cut back to within about an inch of their base. We consider an Apricot tree in good health will bring to maturity two fruit to every square foot of wall covered. Much heavier crops are taken at a sacrifice of size, quality, and future bearing.

Compost for Plants (*J. W*.).—Lapageria rosea requires a compost of fibrous peat broken up rather roughly, adding silver sand liberally. Good drainage must be afforded, as the watering must be very liberal. Lophospermum scandens, Maurandya albiflora, Tropæolum canariense, T. Lobbianum, and Cobæa scandens succeed in a compost of two parts turfy loam, one part leaf soil, one part sandy peat, and a free admixture of sharp sand. It suits Ipomæas, Thunbergia alata, one part old lime rubbish being added.

Various (*Amateur, Dublin*).—1, *Woodlice* in a hotbed will eat the leaves and stems of plants. They may be destroyed by placing a boiled Potato wrapped loosely in a little hay in a small flower pot, and laying it on its side in the frame at night, and in the morning shaking them out into a bucket of boiling water. 2. The *climbers in the greenhouse* beneath the stage will not be injured by want of sun. Ours receive no sun, nor do climbing plants naturally. 3. You may grow *Cucumbers in a greenhouse*, but only by removing the plants or ruining them. They are best grown in frames, or in a house set apart for them. 4. A *hotbed* of properly prepared material will retain warmth for from six to thirteen weeks, but after a fortnight or three weeks the heat begins to decline, and can only be kept up by linings of hot dung. After the maximum heat is attained the temperature begins to decline.

Asparagus Weak (*E. C. K*.).—The growth being weak you could not do better than allow the heads to grow; and if the bed is thin of plants we would drop two or three seeds in holes about a foot apart and three-quarters of an inch deep, in the bare places; in summer, or after May, supply liquid manure abundantly in gutters between the rows, and at weekly intervals in dry weather to the middle of September. In moist weather the watering may be at intervals of from ten days to a fortnight, but you can hardly overdo it.

Columnea Schiediana Flowers Falling (*J. B*.).—We think this is owing to the roots not being in a healthy state, and the plants being grown in too high a temperature during the winter. In winter it requires to have all the light you can afford, and no more water than enough to keep it in health; when showing for flower water more freely, and yet do not overwater. In winter afford a temperature of 55° to 55°, and in summer 60° to 85° will be suitable. Nothing is a greater mistake than to roast this class of plants, or stew them in a hot, close, moist stove in winter. Good drainage is very important; and a compost of equal parts sandy peat, light turfy loam, half part charcoal, and a like quantity of silver sand, and a sixth part old dry cow dung or leaf soil, will grow it well. The atmosphere requires to be moderately moist.

Berried Aucubas for Conservatory (*G. S*.).—We usually take up our plants as soon in spring as we can tell those most likely to bear the greatest quantity of berries—such are, of course, those showing most flower buds—and we pot them and place in a cold house, and this forwards the flowering, so that there is not so very much difference between the berry-bearing and male plants in flowering. If the male be the earlier, the pollen is collected on white, dry paper, and is kept until the others flower, when the pollen is applied to the flowers of the berry plant, and in the early part of the day when the flowers are dry. It will answer quite as well if a male plant in flower be placed close to the berry-bearing sort, both being in flower simultaneously. You may fertilise those in the open borders, take them up early in autumn, and keep them in a cool house. To have berries of good colour early in winter the plants require to be grown in a cool house, an orchard house, or similar structure. Your best plan would be to purchase some male flowers, which you will see advertised in our columns.

Plants for Beds in Winter (*An Amateur*).—For flowering in early summer you may have—1, Arabis albida, edged with Bellis aucubæfolia; 2, Alyssum saxatile compactum, edged Arabis alpina variegata; 3, Aubrietia græca, edged Cerastium tomentosum; 4, Cheiranthus Marshalli, edged Cliveden Blue Pansy; 5, Silene pendula, edged Adonis vernalis; 6, Anemone vars, edged with double lilac Primrose.

Wallflowers (*Hampton Wick*).—There are no named sorts, but Cheiranthus Marshalli, C alpina, and double red, black, and yellow; and as you are very fond of this flower, we would advise you to sow some seed; also German double Wallflower, in a collection of ten varieties. A large Red Currant for the wall is Houghton Castle or Victoria, the other White Dutch.

Carnation and Pansy Sowing (*J. H*.).—You do not say whether you have convenience for heat or not, but we presume you have. In that case we advise you to sow the seed now in pans filled to within an inch of the rim with a compost of two parts light fibrous loam, and one part leaf mould, with a free admixture of sharp sand, and then fill to nearly the rim with the same sifted Scatter the seed thinly, and just cover with fine soil Place in a gentle hotbed, and when fairly up remove to a cold frame, keeping near the glass, and with abundance of air. When large enough to handle prick-off in the open ground in good, rich, light soil, in the first instance about 3 inches apart, and in autumn you may thin out every alternate row and plant, leaving the others in the bed, and those taken up may be planted-out where they are to flower.

Plants for Vases Before a House (*Awee*).—Nothing does better in a hot place in a vase than the old Scarlet Tom Thumb Geranium. If that suits the wall of the house, then we should say use it. Succulents, as Portulacas of the crimson kinds, would look splendid when the sun shone, but dull in dull weather. We object to planting round the base of vases altogether, but if you had scarlet above you might have blue or purple beneath, or yellow Golden Feather, and Blue Lobelia.

Golden-leaved Geraniums Losing Colour (*J C. H*.).—The rich rubble leaf mould and dung are the causes of your Gold-leaved Geraniums becoming greenish out of doors. You must be satisfied with less growth in poorer soil.

Lady Downe's Vine Mildewed (*Subscriber, Lincoln*).—There seem appearances of blotching more than of mildew on the leaves. The hanging with dew in a morning is alike a sign of rich robust growth, but it also shows that there is much moist vapour in the house. For cure, dust mildewed parts with flowers of sulphur; for prevention, use sulphur on the heating medium, when it does not rise higher than 160° to 170°, place sulphur on the walls and shelves where exposed to the sun, and give a little more dry heat and more air, especially early in the morning. But we see you give no fire heat, then use the sulphur, and give more air. The Lady Downe's will not ripen kindly without a little heat. Having two shoots instead of one from a spur is a matter of taste. Your proposed plan will answer very w but, cut a fruitful Vine how you will, you will have fruit.

Grapes Diseased (*H. L. C*.).—Of the berries sent two seem as if they had been scalded, and one had a spot resembling mildew, but they were so shrivelled we could not be sure. Two berries were badly rusted, and the young ones setting were also shrivelled and rusted. We attribute the first partly to want of early air-giving and to too great an amount of atmospheric moisture in the house, and part'y to the same cause, along with the above, that has affected the other two specimens—namely, too high night temperature and the escape of sulphurous exhalations from the flues so heated. The sulphur fumes would be even more dangerous than a little smoke escaping from the flue. The night temperature, 80°, was a great deal too high; from 65° to 70° with flue heating would be safer. Sulphur fumes are most dangerous to Grapes setting and just set, and the Hamburgh is extra tender at that time. We once saw a little house of Hamburghs with the little berries all rusted, from coating the hot-water pipes with sulphur, and causing the water to boil in them or nearly so. Sulphur should be used carefully when the Grapes are small and young. Use less heat and moisture, and more air.

Vine Canes Dead (*E.*) —It is very singular that the leaves of the Vines so well treated should be dead, if the shoots were looked after last autumn when replanting, for that was of importance in September. Have you dressed the Vines with some strong mixture? Have rats or mice nibbled the stems, sheltered by your covering? We fear there is no chance of the Vines breaking now, better plant fresh ones at once. If the Vines are sound at bottom they will break and grow strongly, but they should be doing so if sound.

Air-roots in Vines (*W. H*.).—You will find this subject well discussed by Mr. Record, in No. 383 of this Journal. We agree with him in considering that it is an effort of the Vine to obtain more nourishment. The air of the house should be kept rather cooler and rather drier, and the action of the roots promoted by watering with weak tepid manure water.

Plant and Vine House (*A Constant Reader*).—The size of your house is all right, if it suits you. Merely as a matter of taste we would prefer it to be longer—that is, as 2 to 3, so that the width being 12, the length should be 18 feet, but the compact place will hold a number of small plants. Your mode of ventilation at the front and top by hinged ventilators will answer, but you had better have 9 inches instead of 6 at the top. It is

easy to give little, but in a small opening you cannot give more than the opening. If the house is on your own property, your cheapest plan is to have a fixed roof, rafter sash-bars 1½ by 4½, 18 inches apart, so as to receive glass 18 inches wide, and glaze in the usual way, glass 21-oz. to the foot, and 4ths will answer your purpose. As to your flue, see that your furnace is low enough, and that your furnace-bars are fully 18 inches beneath the bottom of your flue. The direction of the flue is all right enough, but the mode of making it is a very expensive one, making an air-flue all round outside of the fire-flue. We would make the flue, for 2 feet from the furnace, brick-on-bed, then two bricks-on-edge for the space you mention would be ample, and it should be far enough between the sides to be covered with a 9-inch-thick tile. Do not cover with slate, as nothing stands dry heat worse. We presume your Vine border slopes or falls from the house; in that case we do not see much use in having drain-tiles from the flue through the border, as heated air is loath to go down hill. The drainage of the border across and in front would be more important. In making the border use the sandy loam and rotten turf, and even more bones along with the lime rubbish, but as the soil in bulk is rather light, we would not use the ashes from burnt rubbish. Rather clean charcoal is a different thing, and a few bushels or barrow-loads of that would be useful. A few inches of litter put on the border early in the autumn will keep the frost out. The best sort of Vines for your purpose would be the Black Hamburgh, and especially for sale. If your preferred one white, have the Royal Muscadine. If you forced in February you would have to remove the Geraniums when you raised the house above 60°. The most economical use of such a house would be to let the Vines break of themselves, and seldom have the house above 45° with fire heat, until the buds were swelling. The shelf for Strawberries will do very well if they have unobstructed sunlight.

Fungi (*C. B., Chippenham*).—It is by no means uncommon for Morels and other fungi to appear suddenly in pastures, hedgerows, and on lawns and elsewhere where no trace of such things had ever been known before. We believe the matter has never been fully explained. We knew of an instance of an immense fairy ring, 27 feet in diameter, of Agaricus geotrupus suddenly appearing on a lawn in front of a gentleman's house. These fungi, which were never there before, appeared in this gigantic ring for one year, and have never appeared since. This fungus is one of the largest of all Agarics, and could not have failed to make itself known had it been present. The Morel (Morchella esculenta) is considered very good stewed; gather fresh specimens, cut them in quarters, and simmer for about forty minutes with a piece of ham. Or they may be opened and stuffed with veal stoffing, and baked with butter. When well cooked they become perfectly tender, and are excellent eating.—W. G. S.

Garden Plan (*A Subscriber, A. C. H.*).—We fear we cannot criticise your plan usefully. The flower garden on each side of the house will tell very nicely, and the greenhouse would be valued by some because you must pass one of the flower gardens to get to it. On account of the house being unequal in width, a part of the mansion for some 25 feet in length will have a double width of gravel. If nothing else interfered with the idea, that space for a width of 10 feet or so might be made into a neat plant house, so as to come in line with the greater part of the front of the mansion. Whatever room formed the part of that—dining-room, drawing-room, or sitting-room, the light would be little interfered with by a light glass structure, and the enjoyment is great of being able at once by a glass door to go at once among pretty plants. To make the flower garden between the two entrances distinct, we should be inclined to make that into a rosery. The lines of the walks are very graceful and easy. Without seeing the place we would rather object to the bed of flowers I, at the base of the sloping bank, and more especially as that gives a sort of reason for dividing by a walk the two lawns, L, L, and because that walk will be a prominent object from the windows of the principal rooms. We do not think there is any beauty in gravel merely looked at by itself, and its appearance there takes away from the massiveness of the lawn. We would prefer a rather open picturesque glade in front of the mansion. We would, therefore, be chary of flower beds on that lawn, and confine them chiefly to the respective ends, leaving the centre free. A few choice shrubs and specimens of Cupressus, Araucaria, Deodars, &c., would be better, but these are mere matters of taste. We should like to know how you decide as to the middle walk between the two lawns.

Variegated Pelargoniums Losing Colour (*A. D.*).—We have never known any become entirely green, and cannot understand why yours should exhibit that tendency. We grow ours in a cold pit. We pot the plants from April to October, and they are placed with the leaves about 9 inches from the glass—not nearer; they have air day and night when the weather is mild, and are slightly shaded from hot sun from 9 A.M. to 4 P.M. We use a compost of light turfy loam two parts, one part old dry manure, and a free admixture of sand. The soil is kept moist, but no water is given until the soil becomes dry, but before the leaves flag, and then enough is applied to show itself at the drainage.

Roses on their own Roots (*T. G.*).—On their own roots they are not so free in growth for a time as those worked on the Manetti stock. Your best plan will be to put in some cuttings next July, just after flowering, in a cold frame, keep them close and shaded until they are growing freely, then give them air, and harden off. Another good plan is to put in cuttings in September under a north wall, and let them remain until the following April; then take them up and pot, or plant out where required.

Select Pelargoniums (*J. W. P.*).—The following are good:—Archbishop, Charles Turner, Congress, Consul Cameron, Emperor, Lady of the Lake, Menilek, Mr. Rassam, Prince Humbert, Troubadour, Lord Napier, and Envoy. Those are *Show sorts*. A few newer of the same class are Claribel, Her Majesty, Maid of Honour, Regent, Heroine, Corsair, Marion Wilkie, and Cycle. *Fancy*:—Belle of the Season, Brightness, Fanny Gair, Lady Dorothy Nevill, Formosa, Lord of the Isles, Mrs. Alfred Wigan, Mrs. Mendel, Princess Teck, Undine, Pink Perfection, and Duchess of Buccleuch. A few newer of the same—Leotard, Excelsior, Marmion, Lady Carrington, East Lynn, and Agrippa. *Spotted*:—Cybele, Boilean, Argus, Fortunio, Madame Cleriet, Midas, Monsieur le Play, Monsieur Prévot, Princesse Mathilde, Ptolomée, Theophraste, and Christopher Colomb. A few newer are Hector, Jeanne Millot, Camèléon, Danae, Ernest Duval, Monsieur Caillot, Yvonne, and Armide. You would see what was said in last week's Journal of the early-flowering sorts.

Fruit Trees Unproductive (*J. B.*).—We are unable to account for the unfruitfulness of the trees, but we think it is owing to their vigour. The shoots required for extension must be trained in at their full length without stopping, but all others we would stop at the third leaf, and afterwards keep stopped to one leaf throughout the season. The spurs, or short shoots with clusters of leaves, we would preserve entire. We think that they must form fruit buds this season. The Cherry trees we would mulch with short manure, and we would give a good soaking of water when the trees are in flower, and again when the bloom is set, repeating it occasionally in dry weather.

Gladioluses in Pots (*T. G.*).—The plants you intend to flower in pots should now be transferred to 9-inch pots (we presume you have five in each pot); continue them in the frame, but draw off the lights in mild weather, and water freely, giving sprinklings of water overhead daily, and liquid manure twice a-week after May. After that time the lights will not be required. The pots should now be removed to a cold frame. If you wish the plants to flower early they may be continued under glass, giving them plenty of air, and frequent syringings, so as to keep down red spider. Those for out-doors we plant out after this where they are to flower, not placing them in larger pots, but turning them out. Water freely in dry weather.

Rhododendrons from Seed (*T. J. H.*)—Sow the seed now in pans, boxes, or a cold frame, putting in about 6 inches of sandy peat, and make the surface very fine. Just cover the seeds with very fine soil. If sown in pots or pans they must be well drained, and placed in a cold frame until the seedlings are fairly up, and then give air, by degrees removing the lights. It is necessary that the soil should be kept moist, but avoid making it sodden. In severe weather afford protection from frost, and the spring after sowing prick out in a sheltered situation, and if shaded from the mid-day sun all the better. They will do very well at 3 inches apart. Water in dry weather.

Asparagus Weak (*Ignoramus*).—Allow the shoots to grow, cutting none but those fit for table, and water, after the middle of May, with liquid manure, which you cannot give too freely nor too often, and to every gallon add 1 oz. of salt, but this not oftener than once a-fortnight. To make sure of the liquid entering the soil, give it in gutters between the rows. You will have better Asparagus next year. See reply to another correspondent in this day's Journal.

Melon Leaves Scorched (*A. B.*).—The leaves are scorched probably from air not being given sufficiently early, so as to have the leaves dry before the sun shines powerfully on them. It may, however, be due to the glass, which, being very clear, admits the sun's rays too powerfully, which you may determine by affording a slight shade in the hottest part of the day, using the lightest description of floral shading you can. They need this shading most after a period of dull weather, during which the leaves become more succulent, and are liable to scald on a return of bright weather. The soil you name will do. We presume you make it firm, that being necessary to secure short-jointed wood and firm leaves; but from the leaf sent we fear your soil is too open, as the leaf is too thin in substance, and therefore very subject to the attacks of red spider and thrips. Admit more air and early, closing early in the afternoon, and make the soil hard.

Which Bud of a Scion should be Allowed to Shoot? (*T. G.*).—In reply to your query relative to "the new mode of grafting" on page 305, Mr. Kingsley says—"The reasons for making the shoots from one of the lower buds the leader are simple, and are just the same as for allowing a bud on the natural branch to remain and start (in budding) and be finally suppressed. The stock receives a tremendous shock in grafting, and the root action is checked for a time, but recovers after a few leaves are expanded. The lower buds in this way are more likely to start with vigour; the topmost bud is pretty sure to start feebly, unless it be from a terminal eye. Then the shoot from a low bud swells over the top of the stock at once, so both getting more hold of the stock and healing its wounds. In stone fruits the scion is very apt to get hidebound if there is much space between the top of the stock and the shoot. I have three Oranges at present growing from recent grafts. A slug stopped one at the ninth leaf. The shoot from the eye below is already more than twice as strong as any of the lot. I have grafted several hundreds of trees annually for some time, and I am quite sure of the truth of what I stated. You have only to see a few to be convinced. The sort of growth varies with the subject. In Pears and Apples I leave the top of the scion frequently as a spur, but in stone fruits I cut it close off, so that you cannot tell whether the tree has been grafted or budded.—W. K."

Span-roofed Houses on a Slope (*Ajax*).—As you must use that slope of 1 foot in 20, there need be no difficulty in having houses 150 feet long, and built on the slope of the ground, and having the boiler at the lower end. The heating will be all the more effective from the regular rise of the pipes. No doubt you will get the heating done as well by having two houses 100 feet long, but the principle of heating will be in both cases the same, and we should not be afraid of the heating in either case. In such a position, however, we might feel more disposed to have lean-to roofs, with hipped roofs at back, and have the houses on the level with slopes between them. You can have plenty of bottom heat from your Cucumber house by having pipes in a chamber instead of a tank, but your evaporating-pans will not act so well on such an incline, unless you make them very deep. We would be satisfied with clinkers round the pipes, which we could moisten at pleasure. Whatever your opinion of tanks, you can do nothing with them on such an incline unless they are as close as pipes.

Glazing Without Laps (*Alfred Downes*).—You do not state what part of our advice you neglected. All we can say is, that there is no necessary connection between glazing without laps and flooding from rain, if the work is properly done. There must be something defective in your work if after lapping the glass the success is little better. Even a flat garden frame will take off the rains, and your roof must either be very flat, or the glazing badly done. To have two panes for a length of 7 feet, you should have 21 or 25-oz. sheet glass, but we ourselves for common purposes would prefer four squares to two squares. Of course, you could place strips of wood across, beneath the joinings where there is no lap, and that bedded against the glass would prevent drip. If the work is well done there ought to be no drip. If the house is flat-roofed, have from one-eighth to one-quarter-inch laps.

Preventing Weeds on Walks (*Le rosby*).—No plan is so effectual as asphalting the surface. The walks are rendered drier, firmer, and no weeds ever appear. We have repeatedly published directions for asphalting.

Ants on a Lawn (*A. C.*).—We think the little hillocks are caused by ants. We know of nothing that would drive them away so soon as sprink-

ling the hills with guano; but as that in quantity would brown the grass for a time, we would pour into the hills a solution of soft soap, 3 ozs. to the gallon, adding to every gallon a fluid ounce of spirits of turpentine, and then dress the lawn with guano at the rate of 3 cwt. per acre, applying it in moist weather.

Names of Plants (*S. W.*).—Sparmannia africana. Propagate by cuttings. It will bear the winter under greenhouse treatment without risk. (*M. D.*).—The shrub is Cotoneaster vulgaris; the herbaceous plant Scopolia carniolica. (*M. C.*).—Illicium floridanum. (*Melton Mowbray*).—The seedling state of some Pteris, we cannot say which, but possibly near P. flabellata. (*G. Knight*).—1, Chrysanthemum frutescens, the Anthémis of the French; 2, Begonia Ingramii. (*J. R. P.*).—Your Orchid flower was so smashed as to be undetermineable. It probably may be some Epidendrum, allied to E. glaucum, but the column, &c., were so utterly mutilated it is impossible to speak with any confidence. (*East Sussex*).—1, Dædalacanthus nervosus; 2, Phymatodes Billardieri; 3, Balantium Culcita; 4, Asplenium viviparum; 5, Blechnum occidentale; 6, Spironema fragrans; 7, Acacia pulchella; 8, Rhododendron, not yet recognised; 9, Peristrophe speciosa; 10, Sanseviera zeylanica. (*R. R.*).—1, Deutzia scabra; 2, Habrothamnus, not identified; 3, Ageratum glaucum; 4, Mimosa, not in flower and undeterminable; 5, An Acanthad, not in bloom, but apparently some Thrysacanthus. (*F. W.*).—Narcissus Jonquilla flore-pleno. (*J. H., Fota Island*).—3, Saxifraga crassifolia; 4, Aconitum Napellus; 5. Pulmonaria angustifolia. (*B. W.*).—1, Begonia; 2, Sedum Sieboldii foliis variegatis; 3, Saxifraga sarmentosa; 4, Opuntia micrantha; 5, Cereus Mallisonii. (*Inquirer, Bromley*).—The Oncidium is O. sessile. As to the seedling Azaleas, they are good, but not sufficiently distinct from others already in cultivation. (*J. P.*).—Corydalis lutea. (*Flora*).—Bougainvillea spectabilis is most certainly not a native of Australia, and can only be cultivated there. It is native of South America, of Brazil, Peru, &c. (*A Fern Admirer*).—No. 2 is the true Adiantum Capillus-Veneris; No. 1 is A. cuneatum. (*A. C.*).—Primula cortusoides, the original condition of the plant, not the variety amœna, now so much grown. (——).—1, Clematis montana; 2, an Australian species of Olearia, also known as an Euryhia in gardens.

POULTRY, BEE, AND PIGEON CHRONICLE.

OVER-FATTENING FOWLS FOR EXHIBITION.

I would strongly advise "F. S. F." (see page 281) to inquire, before purchasing fowls of any kind, what the owner generally feeds them upon. The Buff Cochin he mentions had evidently been fed to a great extent, if not entirely, upon maize, than which I do not think there can be anything worse for poultry, especially the large breeds. It enlarges the liver exactly as he describes, and fills the birds internally with fat of a deep yellow colour, which, as a matter of course, soon prevents their laying, and eventually kills them.

I had my attention drawn to this subject at first by the poor appearance of my chickens when dressed for the table, having expected the very opposite, from their great weight when living. They had scarcely any flesh on the breast, and looked altogether like half-starved creatures. Thinking their food could not be suitable (maize, ground and whole), I changed it for oatmeal paste in the morning, and whole barley at night, with most satisfactory results.

I think exhibition birds, such as Dorkings, Brahmas, and Cochins, when size and weight go a long way with the judges, should never have maize given them in any form; it may do for birds of more active habits on large runs, but even they in time, I think, would fall victims to it—in fact, this winter I saw a wild Pheasant opened, and it presented all the appearances above described. On inquiry I find it is a common practice to throw it down for them in the woods on account of its cheapness. Now, I think this is the secret of its popularity as poultry food; it is fashionable to term low-priced things cheap, but, nevertheless, a mistake. Peameal, which may often be bought at about the same price, is far superior in every respect, particularly when mixed with a little fine bran (thirds flour), which again reduces the price, and has this great advantage—it lays the fat on in the right place, and the birds are easily reduced in condition if required, which is not the case with maize.—T. W. L.

REARING CHICKENS.

I am generally considered the most fortunate of mortals. I have not entered "the fancy" long, yet a very fair amount of success has fallen to my lot. Three beautiful silver cups adorn my drawing-room; one, a centre piece to the table, attracts the attention of all who enter the room, and they think me skilled beyond all ordinary beings in poultry lore, and acquainted with every secret at all worth knowing. My stock, too, sells as fast as I could wish; had I possessed three times the number I could have sold them all last season. Fanciers send for my photograph, so that I begin to think I must be pretty well known in the poultry world. Correspondents write to me from America. I have sent birds to the States, as well as to France and Australia. My eggs, too, sell for 1*s.* a-piece, and if I liked the trade I could do quite a business in this line.

Yet, if the truth is to be told, I consider myself the most unlucky of mortals. I have a splendid yard; birds are there which have won high honours, and I had supposed I should soon be able to face our first fanciers. But alas for human hopes! I cannot rear my chickens. I read that Dorkings are just as easy to rear as other sorts, and it may be so, but my experience is very different. What ought I to feed my young chickens on? I give them oatmeal or ground oats slaked with warm milk, and chopped egg, and now and then a little meat. For a change they have rice boiled in milk mixed with the oatmeal, and sometimes potatoes mixed in the same way. And yet half of them pine away and die. I should like to try custard, but none of the books tell me how to make it, nor have I ever seen the receipt in the Journal. The damp (I carefully shut up my chickens in the morning) may do some injury, though we are on gravel, not on clay, but this cannot account for the constant losses we are sustaining. Then we put sulphate of iron in the water; we try new ground, and keep our chickens carefully in the dry, and yet we cannot succeed. It is true we shall probably rear seventy chickens in all; but seventy out of a hundred hatched, or even more, is a very poor proportion. Pray tell me where I am wrong. If Mr. Wright, whose contributions are always worth reading, or Mr. Kell, or any other experienced fancier, will put me right, he will confer no slight favour on—O. P. Q.

INFLUENCE OF THE MALE BIRD.

In 1869 I reared some Gold and Silver Poland chickens from eggs bought of Mr. Beldon, and for convenience allowed all the pullets to run together with a Golden Poland cockerel till about Christmas, or it may have been a week or two later, when I parted them for breeding purposes. I afterwards sold the Silver pullets, with a cockerel which I had of Mr. Boothby, to a neighbour, who bred from them about May, and of course expected Silver chickens; but to his surprise as well as my own, about half of them were pure Golden, without a trace of Silver, the others having no trace of Golden. He afterwards tried another sitting with exactly the same results. This must have been nearly five months after the separation from the Golden cockerel.—J. Bloodworth, *Cheltenham.*

STROUD POULTRY SHOW.

In reply to "An Old Exhibitor's" appeal to the Managers of the Stroud Poultry Show, to alter the date of their meeting so as not to clash in point of time with that of the Bath and West of England Society, to be held at Guildford, I beg to say, on behalf of the Committee, that in making their fixture they never intended clashing with that or any other meeting, and as soon as their attention was called to it they seriously considered its postponement, but found it was impracticable without coming into collision with other shows; one argument against it being that birds penned a whole week at Guildford, would not be in condition to show again for some time afterwards. Further than this, the Show has been advertised to take place at Whitsuntide, which is a great holiday in this neighbourhood, in connection with a public fête, so that to alter the date in any way would insure considerable loss, and be breaking faith with the public. It is to be regretted on account of its inconvenience to exhibitors that two important meetings should be held on the same days; but the Committee are content to leave the matter to the discernment of exhibitors, fully relying upon their splendid array of prizes and extensive schedule of classes to insure a good entry. If, however, as "An Old Exhibitor" predicts, our Show suffer in point of attractiveness through the absence of many of the best pens of poultry in England, it follows, of course, that the valuable silver cups and other prizes offered for competition at Stroud will fall very easily to somebody. But the Committee beg to differ with him in this, and believe that exhibitors generally will show their appreciation of our efforts to establish a permanent annual gathering, by supporting our liberal prize schedule, and send their best specimens to compete for the best prizes.—R. Barrett, *Hon. Sec., Stroud.*

GREAT HARWOOD SHOW.

Mr. Ashworth, I find, though an entire stranger to me, was introduced by the Secretary, though without the mention of any name, as "the gentleman who would go round with me"

whilst arbitrating. For your information I will also state why, long after this introduction, and *before* I began judging at all, but was waiting for the penning of the birds, then going on, I said to the Secretary, Mr. Clayton, "Never ask me here again, for I will not come." It was because (as per Journal of April 27th) "our officer, who has been connected with the Society for many years," said to me, "That's my pen. I am showing two pens in that class," &c. I am quite prepared to make an affidavit that *both* pens of winning Dragoons, *when judged*, were Yellows, and that Mr. Yardley's two pens (as per catalogue), one a pair of Barbs, and the other a single Carrier, were empty pens when I awarded the prizes—entirely empty.

I know nothing at all of the feeding or watering of any of the pens in the show, for I saw nothing whatever (myself) of either duty. Mr. Yardley, it seems, won two second prizes out of twelve pens exhibited.

I am confident beyond the possibility of mistake, if the catalogues sold at the show are worthy of dependance, that Mr. Ashworth's pen of Dragoons, second prize, pen 389, were, when judged, Yellows; Mr. Yardley's highly commended pen, 391, were then, when judged, Blues.

If such practices are rendered permissible in poultry shows, the respectable portion of society will withdraw from a pursuit in itself health-giving and harmless, but which might at length equal the worst features of a racecourse.—Edward Hewitt.

[As Mr. Hewitt does not intend to proceed against one of the parties mixed up with the proceedings at this show, we have inserted his letter. We have received other letters upon the subject, but it is needless to insert more.—Eds.]

BEE-KEEPING FOR COTTAGERS.

Although it is an indisputable fact that cottagers may, in favourable situations, materially add to their by-no-means-large incomes by what is commonly termed "bee-keeping," yet how few avail themselves of the opportunity; and apart from the question of profit, there is without doubt a great moral benefit to be derived from the practice. The man who undertakes the judicious management of bees, will seldom fail to follow the example of industry set by these diligent and hard-working little labourers, and profit accordingly; his garden will generally be found well kept, and, as a rule, he is not the person who will spend his evenings, and his earnings too, at the publichouse.

As it is intended in these lines to offer a few practical suggestions on the subject of bee-keeping to our brethren of small means, to whom of course profit will be at all times the main object in the undertaking, it will not be necessary nor advisable to enlarge upon the different systems of management advocated by many in the present day, the necessary adjuncts of which are in most cases bee houses, patent or other expensive hives, numerous glass supers, and other paraphernalia, quite out of the reach of most cottagers, and only suited to those who can afford the expense.

In the case of a cottager about to engage in bee-keeping, the first thing to be considered is the sort of lodging he will provide for the bees; and he can find nothing better for this purpose than the straw hive, but not one of the shape used in the time of our great-grandmothers. It should be moderately large, with a flat top, and a hole in the centre of the top about 2 inches in diameter, which, when the bees are first hived, should be closed with a strong bung; besides the hive, a straw cap or super should be provided for future use. Instead of placing the hive on a fixed stool or stand, the most convenient method is to procure boards about 18 inches square, and let these rest on stalders about 6 feet long; one of these would hold four hives. The advantage of this method is, the hives can be moved without disturbing the bees, for the purpose of weighing, &c., as the hive is taken up, board and all. The entrance to the hive should be cut in the board—never in the hive, as is sometimes the case—about 3 inches wide, and three-eighths of an inch deep, gradually sloping up to the centre of the board; this plan allows the moisture to drain from the hive, while it affords a passage for the bees. The hives should be placed in the most sheltered position facing the south. For coverings, nothing is better than the old-fashioned straw cover or cope, which, while being useful, presents at the same time a pleasing and rustic appearance.

And now supposing everything to be ready for the new comers, the next business is to purchase a first swarm from some neighbour willing to sell; one thrown off about the middle of May, containing about a gallon of bees, will be the best for the purpose; the price probably will be ruled by the season or locality, but a good swarm would not cost less than 10*s*. After establishing the bees in their new home, if the weather is at all favourable they will shift for themselves for a fortnight or three weeks, when they must be watched, and if they then cluster in front of the hive it is a sign that the hive is well filled, and should it be a good season, they will undoubtedly swarm; but this should never under any circumstances be allowed, for if such happen to be the case the swarm will generally be worthless, and the parent stock will be very much weakened. In order to prevent this state of things, as soon as the bees are seen to cluster in front of the hive in large numbers, the cap or super should be placed on the top of the hive; the bees will soon fill it, if, as was before mentioned, it happens to be a good season. When the cap is full, which can be easily ascertained if a small pane of glass is inserted in the super, it should be at once removed. The better plan is to take the cap off in the middle of a warm day, replace the bung at once, and carry the cap some little distance, placing it on a board so that none of the bees can escape; in a few minutes the bees will become uneasy and restless if the queen do not happen to be with them; the cap may then be lifted, when the greater portion will escape and make for home, the rest may be dislodged with a feather, generally with impunity; but if the queen happens to be in the cap with them, which is not often the case, the bees will rest contented, and display no anxiety to escape; under such circumstances the cap must be replaced until the following day, when, in most cases, there will be no difficulty in freeing it from the bees. A cap of honey thus obtained will generally weigh 8 or 10 lbs., and as it is of the very best quality it commands a good price. In towns there is generally some one who will buy it at 2*s*. a-pound, thus rendering a cap of honey far more valuable than a late swarm of bees; and the whole of the bees being retained in the parent stock, it is left in a much better position to stand the winter than it would have been had it swarmed.

The following year, supposing the stock to have stood the winter well, it will come out strong, and probably swarm early. This first swarm should be managed as has been directed in the case of its parent stock, but on no account should the old stock be allowed to swarm a second time; to prevent this, two or three days after swarming it should be capped, which will generally answer the purpose. A good cap of honey will always pay better than a second swarm, and the old stock will always be left stronger; but if the stock is determined to throw off a second swarm, it should be hived in a cap, and placed on the top of the parent hive. The bees will then go to work at once, and in a good year the cap will soon be full, and, of course, when full removed at once, another cap being substituted for the full one, unless the season is far advanced. In some seasons several caps of the very best honey may be taken from one stock by pursuing this method, and at the same time the parent hive will be full of honey; but in moderate seasons both the old stocks and the first swarms should produce one good cap of honey.

In the case of stock hives, the cottager must first determine how many he will keep, and then, as a rule, leave the heaviest swarms of the previous year; they should never be less than 20 lbs. in weight in the autumn to stand the winter well. If there are not sufficient swarms of the year, old stocks may be left. The writer knew a case where a stock of bees stood for fifteen years in a straw hive, swarmed every year, and only came to grief by the foot of the stool decaying in the ground, and the hive tumbling over. After the stock is selected, the surplus hives should be taken in the autumn. Notwithstanding all that has been said to the contrary, it will be better for the cottager to employ brimstone torches for this purpose; he might fumigate the bees, and by these means return those he wishes to take to his stock hives; but it is very doubtful whether this is an advantageous plan, although many, whose opinions are entitled to respect, advocate the method.

It would be highly gratifying to see the practice of bee-keeping more universally adopted by the poorer class of cottagers, and should these hasty lines tend to that end, the writer would be abundantly satisfied.—W. J., *Shepherdswell*.

THE EGYPTIAN BEE, THE RASCAL.

At the meeting of the American Bee-keepers' Convention, a paper was read by Mr. Mitchell, the substance of which was as follows:—

The Egyptian bees were beautiful little fellows. He took a lo of hives to the prairies. He found that the Egyptian bees were cross fellows. They went out of the hive like a flock of

quails. In his experimenting with them he used armour, but got stung fearfully nevertheless. The bees stung the trees, the weeds, the dogs, the children, and everything. But he wanted to give them their due; they made more honey than any other bees he ever knew, but when they made it they meant to keep it. He was not certain that his Egyptians were pure. Mr. Langstroth said he made a number of importations of the Egyptian bee. He had never had an Egyptian queen which he was sure was pure. His opinion was that the Italian bee was a cross between the Egyptian and the black bee.

OUR LETTER BOX.

Breeding Brahmas (*F. T.*).—We strongly advise you not to breed from a single-combed Brahma if you have any idea of breeding for exhibition, or if you wish to have first-rate stock. Your birds are badly selected: you have a bad comb for the hen, and deficient feathering in the cock. You are breeding for mediocrity, and will attain nothing else. Breed from the cock rather than from the hen.

Preserving Eggs in Lime (*M. V. A.*).—We always preserve our eggs in lime, not lime water. There is little difficulty in removing them if the layer is tapped at one end and the eggs are removed in course. The lime then chips away, but if it is attempted to dig them out from the "mosaic" they break.—B.

Brahma Chickens Cramped (*E. M.*).—You would have done far better if you had put your chickens out of doors at once, and kept the hen shut up. The flooring of a room is nearly sure to cramp chickens, and a hen at liberty is sure to lead them into trouble. Put the hen under a rip in a dry sunny place, give them strong beer to drink, and feed them on boiled egg and cooked meat chopped fine. If anything will save them this will.

Hamburgh Cock's Neck Hackle Fallen (*W. I. D.*).—Rub the bare spots with compound sulphur ointment. If you have not that at hand anything emollient will do, provided it is free from salt or acid. We consider May a very good month to hatch all chickens.

Spanish Cockerel's Face Ulcerated (*F. T.*).—We think the case is serious. Powdered alum is the best treatment, but if it stops the issue the face becomes thoroughly diseased with a knotty, hard, malignant tumour, fills the whole face, and eventually the bird dies. If yours presents these features we advise you to kill it.

Custard for Chickens (*O. P. Q.*).—We never give custard, we give curd made in the following manner:—The milk is put on the fire, and when warm it is turned with alum into thick curd. This is put in a cloth and twisted opposite ways, whereby all liquid is got rid of; and the curd being dry and hard will keep for days, and can also be broken off a piece at a time.

Wetting Incubating Eggs (*Hampton Wick*).—For ten days before hatching we dip our hands in a pail of water, bring them out streaming, and wring them over the eggs two or three times. Two days before the eggs should hatch we take a pail two-thirds filled with warm water, and put all the eggs in it. Those that contain live chickens soon feel the warmth, they swim and kick about. They remain seven or ten minutes, and it facilitates hatching.

Oiling Game Cock's Head (*C. C.*).—The best olive oil is the best; the head should be rubbed with it, and the oil then wiped off. We cannot answer your other query.

Cochin Pullet not Broody (*A. M.*).—Few complain as you do. Many are vexed at the number of broody hens, few are angry at the number of eggs. Allow her to go on laying, and buy a broody hen in the neighbourhood; you will buy her for half-a-crown, when you have done with her she will make two shillings, and the Cochin in the meantime will have laid eggs worth double the outlay.

Toulouse Geese not Sitting (*Justitia*).—We have been large importers of Toulouse Geese for many years. We have kept them by scores. We never knew one to sit, but we have known many disappointments suffered by those who would not believe they did not sit, and therefore trusted them with eggs. The Goose in question is a marvel if she be pure bred, which we doubt.

Game Cock Moping (*Scottie*).—The Brown Red is completely out of health, and from your description can only be restored by prompt and strong measures. If he is at this time of year had on his legs we think badly of him. You must give him beer to drink; give him raw meat and raw yolk of egg out of a small shallow pot. For a change you may give bread and milk. You must decide whether he is worth the trouble. You will be exposed to all sorts of vagaries while you breed from crosses, but many of the best birds we have in the Game classes have been bred in this way. You must watch the produce, and if there is a faulty spot you must supply it. It is just like the manufacture of the beverage some medical celebrities swear by in the present day—port-wine negus. The patient tastes it and declares it to be wrong; some wine is added, and the mixture is declared perfect. If water had been added it would have been a failure.

Chicken Food (*B. B.*).—You will need no licence for making and selling it.

Silkies (*Novice*).—They never are exhibited as Bantams. They ought to be in the "Any other variety" class.

A Drake-Duck.—In page 310, line 6 of this article, for "vitality" read *virility*.

Preserving Eggs (*Ilsley*).—You will see what a very excellent authority says to-day about lime as a preserver. Try that mode, and try oiling thoroughly an equal number of eggs with boiled linseed oil, such as is used by painters. You will oblige us by informing us of the results. Eggs preserved in lime water acquire a vile flavour.

Penrith Show.—*Mr. D. P. Gooding* writes to us to ask if the prize money of that Show is to be paid? Perhaps the Secretary will answer the question.

Wharfedale Show.—We are informed that Mr G. Todd, Bridge Street, Sunderland, was awarded the first prize for his Black Red Game Bantam cock.

Brahma Hen Dying Suddenly (*R. W.*).—We think, as her crop was "quite full of corn," that she was crop-bound, and died in consequence, probably from partial suffocation. We are very averse to whole corn as a night-cap for fowls; the last food of the day should be soft, such as ground oats, barleymeal, &c. A broody hen, as she was, usually care not much for food, and does not over-feed. It is bad that she should, as squatting about is not favourable to digestion. Feed very lightly, and if there be any tendency to a hard crop, give warm water freely.

Blue Jacobins.—Mr. Jones Percivall, 36, Chonmert Road, Peckham, has some.

Putting-on Supers (*Scybor*).—A super should never be put on until a hive exhibits unmistakeable signs of being tenanted by a strong population. This period varies with the district, but in the south of England from the beginning to the end of May is the usual time. If you desire your hives to swarm, you must put on no supers, or, at any rate, only a very small one on each hive. These may or may not be finished by the time swarms are sent forth. The better way is to decide as to how many swarms you would like, and having done so, pick out two or more of the strongest and most forward stocks on which to place good-sized supers as soon as the bees show signs of being crowded. It is seldom of much use giving supers to hives after they have swarmed, unless the season should be a very good one. A stock which has partially filled a super and then sends off a swarm, may finish it later in the summer; but our usual plan is, under such circumstances, to transfer the super, having dislodged the bees, to some other stock which has not swarmed, if we have any such then unsupplied with super accommodation. This does not apply to very small supers, which may be allowed to remain on the original hive.

METEOROLOGICAL OBSERVATIONS,

Camden Square, London.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude 111 feet.

Date. 1871. April.	9 A.M. Barometer at 32° and Sea Level.	9 A.M. Hygrometer. Dry.	9 A.M. Hygrometer. Wet.	9 A.M. Direction of Wind.	9 A.M. Temp. of Soil at 1 ft.	In the Day. Shade Temperature. Max.	In the Day. Shade Temperature. Min.	In the Day. Radiation Temperature. In sun.	In the Day. Radiation Temperature. On grass	Rain.
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
We. 26	30.025	55.4	50.3	N.W.	48.6	63.2	40 7	104.0	38.4	0.090
Th. 27	29.795	54.3	51.2	N.W.	49.6	66 0	44.1	116 0	42.0	0.030
Fri. 28	29.875	55.9	51.6	S.W.	50.1	62.3	45.0	100.8	42.5	0.299
Sat. 29	29.526	55.7	53.7	W.	50.8	64.0	49.6	112.3	49.1	0.341
Sun. 30	29.795	48 3	45.0	N.	51.0	61.2	45.5	115.4	42.4	0.071
Mo. 1	30.078	51.0	45.3	N.	49.9	59.8	38.8	108.2	38.8	—
Tu. 2	30.140	53.6	48.1	N.E.	49.9	59.2	36.1	89.4	34.6	—
Means	29.891	53.5	49.2		50.0	62.2	42.8	106.6	41.1	0.831

REMARKS.

23th.—Dull with occasional showers, fine evening, rain between 9 and 10 P.M. and during the night

27th.—Dull in early morning, but cleared before noon, then very fine, a few very large drops of rain between 10 and 11 A.M., thunder at 3.30 P.M., heavy shower at 6 P.M., fine evening.

28th.—Fine in early morning, sharp shower soon after 11 A.M., then alternate sunshine and showers, wet evening. [times heavy.

29th.—Wet night and early morning, rain at intervals all day, and some-

30th.—Dull in early morning, fine by 10 A.M. and till 5 10 P.M., then heavy rain for short time, fine evening, planets very bright.

May 1st.—Very fine all day, rather misty in the evening and during the night, and cold. [fine in the evening.

2nd.—Misty in morning, but cleared off before noon, rather dull, but very

A warm, genial week, with frequent slight rain.—G. J. Symons.

COVENT GARDEN MARKET.—May 3.

A moderate supply and steady demand have been the rule for the past week, and a good attendance on the market days, both of home buyers and those from the provincial market, warrants us in looking forward to an increase of business. The varieties of hothouse produce now offered comprise Pines, Grapes, Strawberries, Peaches, Figs, and Melons. Large arrivals of Potatoes are to hand from Malta and Lisbon, and heavy stocks of old remain at the depôts.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples ..... ½ sieve	1	6	to 3	0	Mulberries ..... lb.	0	0	to 0	0
Apricots ..... doz.	0	0	0	0	Nectarines ..... doz.	0	0	0	0
Cherries ..... lb.	0	0	0	0	Oranges ..... ℔ 100	6	0	10	0
Chestnuts ..... bushel	10	0	18	0	Peaches ..... doz.	20	0	40	0
Currants ..... ½ sieve	3	0	0	0	Pears, kitchen ..... doz.	2	0	6	0
Black ..... do.	0	0	0	0	dessert ..... doz.	0	0	0	0
Figs ..... doz.	10	0	21	0	Pine Apples ..... lb.	6	0	10	0
Filberts ..... lb.	0	0	2	0	Plums ..... ½ sieve	0	0	0	0
Cobs ..... lb.	2	0	2	6	Quinces ..... doz.	0	0	0	0
Gooseberries ..... quart	1	0	1	6	Raspberries ..... lb.	0	0	0	0
Grapes, Hothouse .... lb.	8	0	18	0	Strawberries ..... oz.	0	6	1	0
Lemons ..... ℔ 100	6	0	10	0	Walnuts ..... bushel	10	0	16	0
Melons ..... each	6	0	12	0	ditto ..... ℔ 100	1	0	2	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes ..... doz.	4	0	to 6	0	Leeks ..... bunch	0	4	to 0	6
Asparagus ..... ℔ 100	4	0	8	0	Lettuce ..... doz.	1	0	2	0
Beans, Kidney .... ℔ 100	1	0	2	0	Mushrooms ..... pottle	1	0	3	6
Broad ..... bushel	0	0	0	0	Mustard & Cress .. punnet	0	2	0	0
Beet, Red ..... doz.	2	0	3	0	Onions ..... bushel	7	0	10	0
Broccoli ..... bundle	0	9	1	6	pickling ..... quart	0	0	0	0
Brussels Sprouts .. ½ sieve	0	0	0	0	Parsley ..... sieve	3	0	6	0
Cabbage ..... doz.	1	0	2	0	Parsnips ..... doz.	0	9	1	0
Capsicums ..... ℔ 100	0	0	0	0	Peas ..... quart	3	0	10	0
Carrots ..... bunch	0	4	0	8	Potatoes ..... buehel	2	0	4	0
Cauliflower ..... doz.	3	0	8	0	Kidney ..... do.	3	0	4	0
Celery ..... bundle	1	6	2	0	Radishes .. doz. bunches	3	6	1	0
Coleworts .. doz. bunches	3	0	6	0	Rhubarb ..... bundle	0	4	1	0
Cucumbers ..... each	0	6	1	6	Savoys ..... doz.	1	6	3	0
pickling ..... doz.	0	0	0	0	Sea-kale ..... basket	2	0	3	0
Endive ..... doz.	2	0	3	0	Shallots ..... lb.	0	6	0	9
Fennel ..... bunch	0	3	0	0	Spinach ..... bushel	2	6	4	0
Garlic ..... lb.	0	3	0	0	Tomatoes ..... doz.	0	0	0	0
Herbs ..... bunch	0	3	0	0	Turnips ..... bunch	0	6	0	9
Horseradish .... bundle	3	0	6	0	Vegetable Marrows .. doz.	0	0	0	0

WEEKLY CALENDAR.

Day of Month	Day of Week.	MAY 11—17, 1871.	Average Temperature near London. Day.	Night.	Mean.	Rain in 43 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
						Days.	m. h.	m. h.	m. h.	m. h.	Days.	m. s.	
11	Th	Meeting of Royal Society, 8 30 P.M.	62.4	40.9	51.6	19	17 af 4	36 af 7	47 af 1	27 a 10	☾	3 50	131
12	F		62.9	40.5	51.7	20	15 4	38 7	16 2	43 11	22	3 52	132
13	S		63.5	38.8	51.1	20	14 4	39 7	40 2	after.	23	3 53	133
14	Sun	5 Sunday after Easter.	63.2	40.3	51.7	16	12 4	41 7	57 2	8 2	24	3 54	134
15	M		64.8	40.7	52.7	15	11 4	42 7	15 3	18 3	25	3 54	135
16	Tu	Meeting of Zoological Society, 9 P.M.	66.0	43.3	54.1	15	10 4	44 7	30 3	27 4	26	3 53	136
17	W	Royal Horticultural Society, Fruit, Floral, [and General Meeting.	65.7	41.0	53.4	16	8 4	45 7	48 3	35 5	27	3 52	137

From observations taken near London during forty-three years, the average day temperature of the week is 63.2°, and its night temperature 40.8°. The greatest heat was 86°, on the 15th, 1853; and the lowest cold 25°, on the 15th, 1850. The greatest fall of rain was 1.14 inch.

CULTURE OF PLEROMA, HOVEA, &c.

NEW species and varieties of stove and greenhouse plants have been introduced to our notice in abundance of late years, plants cultivated for their foliage rather predominating over those admired more especially for the beauty of their flowers. Among so many new and beautiful productions it is very evident that numbers of equally desirable subjects do not receive that amount of attention which their merits deserve. Deep blue and purple flowers are not enough grown in our greenhouses and hothouses. Azaleas are much and deservedly admired, Heaths equally so, and the different classes of Pelargoniums are in all gardens; but, unfortunately, none of the above have flowers approaching to blue. It is, therefore, very desirable that flowers possessing the above distinctive mark should not be lost sight of. Besides Pleroma elegans, there is Hovea Celsii and Leschenaultia biloba major; and the different species and varieties of Statice are not so much looked after as they deserve to be.

Pleroma elegans when well grown is a greenhouse plant of noble appearance; its glossy leaves and large deep purple flowers render it one of the most effective plants in a collection. It is not difficult to cultivate if properly managed. It is undoubtedly a greenhouse plant, but the best flowers are obtained, and the plant is kept in better health, if it has the advantage of an intermediate house early in the year and until the first flowers show signs of opening, when it should be removed to the greenhouse.

The plant is propagated by cuttings, which strike freely in a greenhouse temperature, if they are placed on a shelf in the greenhouse under a bell-glass. The way to manage them is this—take in July or August cuttings of the same season's wood before it is quite ripe, and insert a number in a 5-inch pot in a compost of two parts turfy peat, one of loam, and one of silver sand. The cutting pot should be carefully drained, and three-fourths filled with the compost, filling up with pure sand. As soon as the cuttings are well rooted, pot them off singly in 3-inch pots, place them in a growing temperature of from 50° to 55°, and pinch them frequently, training the shoots so as to make compact specimens, while using no more sticks than will be necessary to preserve the shoots in a proper position. The best form for the plant, and that which shows the flowers to the best advantage, is the bush, keeping the plant widest at the top. This Pleroma is of free growth, and comes into flower in a young state.

After plants of this class are well established, they require repotting about once a-year, and the directions here given will be applicable to all similar subjects. No one will ever grow healthy, handsome specimen plants who does not repot them with great care and in a proper manner. The same remark will apply to the training and management of the plants in a young state. A good compost for the Pleroma is two parts turfy peat and one part turfy loam, about 3 inches of the top spit, where it can be obtained, tearing the turf in pieces with the hand. Enough silver sand should be mixed to keep it open. It is not advisable to give hardwooded plants a large shift; the pot should not be more than 1½ or 2 inches wider than that in which the plant was growing, and the ball of earth should be quite moist before turning the plant out of the pot. After repotting, a close rather moist atmosphere is most suitable, but the plants should not be watered at the roots for a few days. There is nothing more injurious to plants of this class than watering them immediately after repotting; the new material is saturated with moisture before the young spongioles are formed to take it up, and before they are in an active state the soil becomes sodden; as the roots penetrate into it they are killed, and if watering be still persisted in most likely the plant will be entirely destroyed. Instead of watering at the roots let the plants be dewed overhead with a fine syringe. The roots will soon take hold of the fresh soil, afterwards the plants may be watered.

The best position for the plants is close to the glass in a low span-roofed structure, and to grow hardwooded plants well they should not be crowded with Geraniums and fast-growing plants of a similar character, especially when in a young state. When the plants attain a large size they are apt to lose their leaves near the base, but this can be remedied by training the shoots downwards. The most suitable time to do so is in the autumn, as the plants make the best flowering shoots if they are allowed to ramble and grow out during the summer.

A somewhat similar Melastomad to the preceding, of recent introduction, named Lasiandra macrantha, has larger flowers, and is of a more robust growth. It requires rather more heat. The flowers are of the same colour, and if they were produced in the same profusion it would be a very valuable plant, but I have seen it both growing in a stove and greenhouse temperature until the plants were 3 feet high, and then they only produced one or two flowers at the ends of the principal shoots. Very different is the variety Lasiandra macrantha floribunda. This has been produced in small pots at some of the floral meetings at South Kensington, and proved itself to be a great acquisition, plants not more than a foot high flowering profusely.

Hovea Celsii is another plant which is seen even more rarely than the preceding, but when it is well managed, which, however, it seldom is, its pretty little deep blue flowers never fail to please. It is best propagated from seed, and should be grown in the same compost as that recommended for Pleroma. Small plants of it flower freely, but if it is intended to make fine specimen plants the flowers should be picked off. The shoots must also be bent down, in order that they may break freely. It will not make a specimen by pinching the points out of the shoots without proper training; at the same time this is a plant that should not be lost sight of, though I fear it is getting very uncommon. It requires much skill and patience to grow a specimen of it, but it is one of the plants which will repay the cultivator for all his care and attention.

Leschenaultia biloba major, like the Hovea, is a native of New Holland, and requires greenhouse treatment all the year round. It is propagated by cuttings which strike

readily in sand under a bell-glass in a shady part of the greenhouse. The most suitable compost is turfy peat, with a small portion of loam, and a liberal proportion of silver sand. This plant is now seldom grown for exhibition purposes. Indeed I do not remember to have seen it at any of the London shows since Mr. John Fraser, of the Lea Bridge Road Nurseries, withdrew from exhibiting. There is no other free flowering plant which I know that has flowers of the same beautiful blue colour. It is a very effective plant in a collection, and is, I think, indispensable where the size of the pots is limited, as it cannot be grown to the size of a Clerodendron or Erica Cavendishii. The frequent pinching of the young shoots and tying them out as they require it should be attended to.

The shoots of this species have a close upright habit, and it does not make a specimen so readily as the more bushy branching species, such as L. formosa. Keeping the plants close to the glass, and shifting into larger pots as they require it, must not be neglected. It is also peculiarly liable to the attacks of green fly, and may be seriously injured before the insects are discovered, as they huddle together, clinging to the stem, and are of the same colour as the young shoots. The best remedy is fumigation with tobacco.—J. Douglas.

DORSET FRUIT AND ROSE PROSPECTS.

Till we arrive at May the 14th we can hardly be sure of some of our fruits. At present the following is a faithful report:—Apple trees are in abundant bloom, and not yet injured. Pears a sufficient crop, and not materially injured. Gooseberries, Currants (Red, White, and Black), and Raspberries most abundant. I never had finer crops. Strawberries abundantly trussed, and beginning to bloom. Plums good, and not yet injured. Cherries set, and wonderfully good. Peaches and Nectarines a fair crop, and better than I expected after such a cold spring in such an exposed garden. Some of the trees are wholly cropped; others have dropped their blooms and fruit after setting. Trees that bore no fruit last year will bear well this year, and *vice versâ*. Moderate cropping is best: if a critical spring follows heavy cropping the tree will be more likely to fail in bearing than one that either bore no fruit, or was moderately cropped in the previous year. I give instances.

Last year I overcropped the Marquis of Downshire Peach: this year it has dropped its blooms. Last year the Early Ascot—the Royal Ascot is more appropriate—bore only two fruits: this year it has an abundant crop. The trees are side by side. It is curious that in my stable-yard, where the Palmerston Peaches (see "Florist" for May) were grown, and which is a protected situation, all the trees, except a fresh-planted old tree of Grosse Mignonne, have dropped their blossoms and fruit, whilst in my two other exposed gardens the trees have set very respectably, some nobly. I am glad that I shall have a good crop of Early Ascot, Pine Apple Nectarine, Nectarine Peach, and Dr. Hogg. They are four of the best varieties.

As regards flowers, I can only speak of one—namely, the Rose. The plants are in superb condition, in abundant bud, with beautiful foliage. I hope the winds will be civil. Some of the Roses show colour. From the 12th to the 20th of June is the best time to see them here. The yellow wall Roses bloom about the middle of May. They also are in superb condition, and are laden with buds.—W. F. Radclyffe.

PRIMULA CORTUSOIDES AMŒNA.

In common with many others I feel much obliged to Mr. Jones for his article on page 303, calling attention to the merits of Primula cortusoides amœna as an ornament to the conservatory, and the mode in which he cultivates it. One thing, however, he has omitted, and I have no doubt but he will remove the defect—he has not stated the character of the soil in which he grows it. This is of so much consequence that I am sure he will excuse my inquiring further about it. The family of Primula differs so much in habit, character, and requirements, that no general rule can be laid down for its treatment, or rather all the kinds must not be treated alike. Our common wild Primroses grow in both shady and sunny places, but more commonly in the former, and are generally most plentiful on soil of a somewhat calcareous nature, while the Cowslip likes moisture, and often a stiff retentive soil. The more rare Primula farinosa is only found in wet peaty bogs, and I imagine P. amœna to be akin to this, as I suppose that it is an improved form of P. cortusoides, and I would also ask if its proper name is not P. cortusoides amœna; but if it is a variety of this species, it is a great improvement on the original, and when flowered in the manner Mr. Jones describes, it must be very attractive. I imagine, however, that there is some special feature in the soil that renders the culture of the plant so successful. We occasionally meet with Cyclamens in a high state of cultivation, and not unfrequently with them in just the reverse condition; it is the same with the Primula.

In my own case I have not been at all successful with Primula cortusoides amœna, owing to the plants having been accidentally neglected last summer, but I have seen sufficient to appreciate its merits. I think, from its appearance, that it must be hardy, as most plants are which die down to the ground entirely. I hope Mr. Jones will explain to us whether he uses peat in its cultivation or not. I believe I am right in saying that the general character of the soil in the neighbourhood of Didsbury, if the same as that which prevails in the district a few miles south of Manchester, is a black sandy soil resembling peat in some degree in being well adapted for the growth of Rhododendrons and similar plants, and I therefore infer that it suits this Primula, for a partially peaty soil is favourable to the growth of the Chinese Primula, P. cortusoides, and P. denticulata; the case is just the reverse with the wild Primrose, Cowslip, and garden Polyanthus.

I may here remark that, having last year a number of spare plants of P. denticulata, I planted out a portion of them amongst shrubs, and I find many of them have survived the past winter, suffering more, I think, from worms and slugs than from frost; for although most of the plants are alive they do not look so well as I should like. I hope, however, during the ensuing season to try P. amœna, and with greater success than hitherto.—J. R.

GREENHOUSE PLANTS.—No. 3.

Climbers Suitable for Long Roofs or Rafters.—In small gardens, or where there are not special structures for Grape-growing, I would have that best and most useful of all climbers—the *Grape Vine*. It is, I know, contrary to the advice of all our best authorities that Vines and plants should be grown together, but good Grapes have been grown in greenhouses or plant houses fit for the dessert, if not the exhibition table. I cannot see the consistency of the objection to fruit and flowers being grown in the same structures. Do we not grow some plants solely for the beauty of their berries?—Solanums, for instance, and others, which, however well grown and berried they may be, cannot compare to clusters of Grapes either for the gratification of the eye or the palate. Whether we look upon them for ornament or for utility, either in the greenhouse or at the dessert, the palm must always be given to Grapes. Some have an idea that plants of any kind on the roof are very detrimental to plant-growth, and I have no doubt they are so when the shade is from a very close growth; but there need be nothing of this kind, for the most that we want is a slight shade from the powerful rays of the sun between the middle of April and the middle of September. The great evil is planting the Vines too closely. I would not have them in any case nearer than 3½ feet apart, and not more than 4 feet from each other. At this distance, no class of plants shade a greenhouse too much, not even Vines, which it seems strange should be looked upon as more injurious to plants than any other class of climbers. They have large foliage as compared to other climbers, but the leaves are not put forth until the best of hardwooded plants are in flower, and before they are fully developed that class of plants may with safety, and to their benefit under any circumstances, be removed to a cold pit; whilst those which remain, as Camellias and Azaleas, are the better of the shade afforded by the foliage of the Vines. Then in winter, when no shade is wanted, the Vines are leafless. So that, taken all in all, they are the best description of climbers for a greenhouse; but they may be injurious, like any other kind of climbers, when they are planted very closely together, so as to cause a deep gloom.

Presuming that Vines are planted, in addition to the inside border, part will need to be outside. It is not necessary that this should exceed 10 or 12 feet wide, but less will do. The front wall of the greenhouse will of course require to be on pillars to allow of the roots passing to the outside; and unless the bottom is rock or gravel it ought to be concreted, an excavation being made so that the border may be about 3 feet 6 inches deep, and the more it is above the surrounding ground level the more dry and warm it will be. There should be a

drain, with the bottom of the border inclining to it. The bottom of the border may be covered with about 2 inches of rough gravel, which must be rammed firm and afterwards run with lime, adding two parts of fine gravel to one of lime, and bringing the mixture to the consistency of thin mortar with water. The drain should be laid on the concrete in a channel, with all the border inclining to it. When the concrete has become hard place 9 inches of rubble for drainage, and then cover with a layer of sods grass side downwards. The border may be formed of eight parts of the top 3 or 4 inches of a pasture chopped into pieces of 3 or 4 inches square, one part of old lime rubbish, and one part free or grit stone in lumps from the size of an egg to that of a man's clenched hand, one part fresh horse or sheep droppings, and presuming a part to be a cartload, add ten bushels of bruised bones, the same of charcoal, and five bushels of calcined oyster shells. The whole, having been well mixed, should be placed in the border both inside and outside 9 inches higher than the intended or ultimate level. It is not necessary to make more than a part of the border at a time, and I only make the inside border the first year, considering it very important to get the roots well established in it. I find that the roots more readily take to the outside portion of the border.

The best time for planting Vines in a greenhouse border is in spring, when the shoots are 1½ to 2 inches long, and the roots should be planted inside.

The kinds which succeed in a greenhouse with no heat except that necessary to exclude frost and dry up damp by promoting a circulation of air, are :—

Black Grapes.—Black Champion, Black Hamburgh, Frankenthal (Victoria and Pope's Hamburgh), Duc de Magenta, Gros Colman, and Trentham Black. The Black Muscat of Alexandria (Muscat Hamburgh), sometimes does well worked on the Black Hamburgh, also Black Prince. In cold situations Espiran (Esperione), and Ingram's Prolific Muscat ripen more surely than any of those named.

White or Amber Grapes.—Foster's White Seedling, Chasselas Vibert, Buckland Sweetwater, General della Marmora, and Chasselas Royal. The White Frontignan does fairly, also Calabrian Raisin. In cold situations Royal Muscadine, White Romain, Early Saumur Frontignan, and Early Smyrna Frontignan will suit.

The treatment of Vines in greenhouses not differing from that in vineries, and as a volume might be written on their treatment, I must refer to the "Vine Manual" for particulars of management.

As regards climbers I should have a drain the length of the border, and 6 to 9 inches of rubble, covering with a layer of turf, and filling with compost 9 inches higher than the ultimate level.

The compost will, of course, differ with the subjects, and the kind will be named for each, but I may say that loam and peat are the principal materials. They must be of the proper descriptions. The loam most suitable is that of a pasture where the soil is a good rich yellow or hazel loam, with a tendency to be sandy rather than clayey. This should be pared off not more than 2 inches thick, and chopped up in pieces about 2 inches square, preserving, however, the finer portions. The peat should be from an elevated moor, where there is a good growth of Heather or Ling; or, if the common Bracken (Pteris aquilina), is plentiful, or, indeed, present, and the peat is of a brown colour and full of particles of white sand, it is of the right description. Avoid peat from low ground, and which when wet and squeezed becomes a soapy mass, and gives off inky water. The Heath on it will not be healthy, nor will any good greenhouse plant thrive in it. It is well to remove the Heath, pull it off, and clear away any deposit of Moss or Lichen, and then pare-off the peat from 3 to 6 inches deep according to its character. It should be chopped up rather roughly, removing any stems or the rhizomes of Ferns. Both loam and peat should be used fresh. Leaf soil is another material that will be required, and it is important that it should be fully half decayed, and be freed of twigs or old decayed branches of trees or other timber likely to cause fungus in the soil.

Manure is for some climbers desirable, but for general purposes is not of great importance. For borders it should be fresh; horse or sheep droppings are what I recommend.

Acacia oleifolia elegans.—This, though not a climber, is most excellent for covering roofs. It makes shoots several feet long in a season, has pale glaucous green leaves, and bright yellow flowers produced in great profusion, and in long succession. My plant has rarely been out of flower during the past twelve months, but its general time of flowering is from September to April. It requires a compost of four parts loam, two parts peat, and one part each of silver sand, and sandstone in lumps between the sizes of a walnut and an egg. Being an evergreen the soil must be kept moist at all times, and should be driest in April, when it is presumed the plant will be pruned-in rather closely after it has grown to the extent required; and the shoots should be trained so as to cover the rafters, and then be allowed to take their downward course. Shoots 4, 5, or more feet long will hang from the rafters and be clustered with their golden balls of bloom.

Bignonia jasminoides.—In habit this has the appearance of a gigantic Jasmine; the flowers are purplish. It is very free in growth after it has become established, but requires patience at first. The flowers are produced on the short shoots from the well-ripened wood of the previous year, and the wood should therefore be well ripened by keeping the plant dry early in autumn, and thinning out the shoots so as to fully expose to light and air those left. Prune rather freely in February, leaving enough of last year's shoots to furnish the short stubby shoots which usually afford flowers. Use a compost of equal parts of peat and loam, half a part of leaf soil, and a free admixture of sand. Water the plant freely when it is growing, but keep it rather dry in winter. Of this there are some fine varieties, as Alba magna, Floribunda, Rosea, and Splendida.

Lapageria rosea.—This has both fine foliage and fine flowers, and is one of the most ornamental of greenhouse twiners. The flowers are large, bell-shaped, and of a bright deep rose, produced in great profusion in summer, usually in July and later. There is a variety with white flowers (L. rosea alba). It does not make any great way at first. As most of the plants sent out are seedlings, they do not flower until the third or fourth season. Soil, peat chopped-up roughly. Good drainage must be provided, as when the Lapageria is growing and flowering a good-sized plant will need a three-gallon watering-pottul of water daily. When not growing less water is needed, but even then, as compared to other plants, the watering should be liberal. The shoots should be trained-up straight, all those coming from the base being encouraged, and the shoots ought to be disposed rather thinly. The pruning should be confined to thinning-out the old and weak shoots.

Mandevilla suaveolens in a pot is poor, but planted out in a greenhouse border it is magnificent. It is an evergreen, producing white and sweet-scented flowers in the early part of summer. The plant is a great favourite with many for its sweet-scented flowers. Soil, two parts light loam, and a part each of leaf soil and sandy peat, with a free admixture of sharp sand. Water the plant abundantly when growing and flowering, and syringe it freely when in a growing state. When at rest keep it rather dry, giving no water as long as the foliage remains fresh. Thin-out the shoots rather freely before growth begins, or about February, and do not keep it very closely tied-in at any stage, for nothing spoils the effect of this, and, indeed, all climbers, so much as keeping them tied-up like a hay-band. The shoots never look so well as when hanging down from the rafters.—G. Abbey.

MYOSOTIS DISSITIFLORA.

If I were asked to name the most lovely hardy spring-flowering plant, it certainly would be Myosotis dissitiflora. If "G. S." (see page 303) has the true variety, and will propagate it by cuttings during July and August, when it will strike very freely under a hand-light in a shady spot, and will plant out the young plants in as dry a situation as possible, either there to stand the winter or to be transferred to the spring beds after bedding plants are off, I venture to say he will be delighted with it. With me it has been a perfect sheet of bloom since the first week of March, while Myosotis sylvatica is even now (May 1st) scarcely in full bloom. I remember a strong recommendation was given some time since in a leading garden periodical not to propagate this plant from cuttings, but from seed, in order, if I remember rightly, to produce hardier and more sturdy plants to stand the winter; but I can only say that plants from cuttings have withstood the last two severe winters almost without loss, certainly not two per cent. being killed. "G. S." says his flowers open of a pinkish colour, from which I infer he has the true variety; it does so, and some plants, even from cuttings, more so than others, but as the flowers age they change to an azure blue; a bed in full bloom does not present the slightest trace of pink. By the

way, I wonder the London market florists have not found it out as a pot plant. Nice little plants lifted and placed in 48-pots about the middle of February, and set in a cold frame for a week or so, burst into charming masses of blue, close and compact, and I venture to predict would sell by thousands.—WILLIAM WINDEBANK, *Southampton.*

OAKWOOD HOUSE, MAIDSTONE—MARÉCHAL NIEL ROSE.

THERE are few places exhibiting more picturesque beauty and greater fertility than the vale of the Medway in the immediate neighbourhood of the town of Maidstone. The Medway, it is true, is deprived of some of its natural beauty by the necessities of navigation, a lock here and there interrupting that meandering course which the poet and romance writer like to dwell upon, but these drawbacks are not many, and their presence is more than compensated for by the fact of their existence having secured an excellent path along the side of the river as far as it is navigable, which for small craft it is up to Tunbridge. Its course in the neighbourhood of the latter town, and for some distance below, is through a flat rather than an undulating country, and it is not till it approaches the pleasant village of Wateringbury that its banks assume that irregular ascending tendency which, where aided by the great fertility of the soil and the diversity of cultivation, produces a rich landscape. The acreage under Hops and fruit in many parishes exceeds that of corn. Peeping out here and there over the tops of trees may be seen the spires of churches, and often nestling around them a picturesque village of dwellings of the seventeenth as well as those of the nineteenth century, while surrounding all are frequently found umbrageous fruit trees which at the proper season yield basketful after basketful of their tempting treasures—not here tempting to be sure, for the abundance is such that but few charges are made at the magistrates' office for fruit-stealing, and in these cases the offenders are mostly vagrants. The sylvan beauty is nowhere marred by the smoke of manufactories, or at all events but little harm is done in that way. In such a district, as may be expected, land is dear, eligible sites for villas commanding high prices. The eye of the traveller is now and then attracted by the appearance of a mansion whose importance and surroundings imply that it has been the residence of some of the nobility or gentry of a bygone age and is still occupied as such, while others, equally important and well-situated, have but a modern history; such an one is the mansion which I will now proceed to notice.

Oakwood House, the residence of L. D. Wigan, Esq., a newly-erected and commodious mansion, is situated less than a mile from Maidstone, and about half that distance from the river Medway, which at this point flows from south to north. The residence being on the left bank has its principal front to the east, the dressed grounds, which are very extensive, being mostly in that direction. The mansion is one of those enriched modern erections, constructed of red brick and Bath stone, in which internal comfort and outward display are happily united. As a residence it is beautiful, while the site is all that could be desired. The highly cultivated district on the opposite bank of the Medway, including the fruit-famed districts of the two Farleighs (East and West), Tovil, Loose, and the heights beyond, are all seen, while no more of the town of Maidstone is visible than is sufficient to show that a town is there; and beyond that, over the undulating park and grounds of the Earl of Romney, is seen in the distance the chalk cliff of that ridge of hills commonly called the backbone of Kent.

Returning to my starting point, I may remark that Oakwood House and all its surroundings are of modern date, the trees which give it a name alone excepted. Its situation is sufficiently elevated without being bleak, and, being well backed by trees, it has a snug appearance. The garden front, as already stated, faces the east, or rather south-east, the carriage entrance being to the north, while a spacious front, equalling the southern one in length and importance, faces the west or south-west, terminating with that indispensable appendage to a mansion of importance, a billiard-room. A rather imposing verandah or corridor, partly glazed, runs along the principal garden front, while a conservatory and exotic fernery are united to it at the south-east corner. A broad walk, with a corresponding ample width of turf, forms a terrace on which the house stands, while sloping banks unite it with the ground below, to which steps give access at suitable places, the descent at the principal front being, perhaps, as much as 12 or 15 feet. A series of flower beds, forming what is usually called the Florentine chain, run along the belt of turf on the upper terrace, while below, beds of greater dimensions are in the course of formation, the whole of the alterations contemplated there not being yet completed; indeed, much of the space now being laid out in pleasure ground was a few years ago a quarry, and advantage is being taken of the inequalities thus formed to give that undulating character so much admired by those who assume to be judges. Some precipitous cliffs will remain only partially clothed with foliage, while other eminences will be crowned in that way, dells and other inequalities being treated in like manner. The space at command is ample for all purposes, and includes a large, perfectly level area at the base of the terrace slope, and what shrubs and trees had been planted were succeeding well, the large Oaks at the back and western side of the mansion affording sufficient shelter to the whole.

The kitchen garden is to the west of the mansion, a walk leading from one to the other through what will be masses of shrubbery. Some Rhododendrons were thriving well in the ordinary soil of the place, assisted only with a little leaf mould obtained from the adjoining wood. Mr. Piggott, the able gardener, is of opinion that leaf mould is much deteriorated by confinement and heating when it is formed in the usual way. Some extensive orchards, of many years' standing, adjoin the ground in this direction. The Plum and Cherry trees were masses of bloom, and the Apple trees equally promising, though not fully out at the time of my visit.

In the conservatory adjoining the mansion attention is first arrested by two noble specimens of Indian Azaleas of great size, standing like sentinels at the doorway; further in was a specimen Acacia grandis, 12 feet or more high, and about half that in diameter, a mass of bloom. Several Coleuses had also been brought forward in a warm place, and graced the conservatory; amongst them the variety named Her Majesty was by no means the least ornamental. A vigorous-growing Begonia, named, I believe, B. ricinifolia, was also in full flower, while some well-flowered Salvias formed the background, with specimens of a useful Pelargonium for forcing called Crimson King. It is one of the greenhouse kinds. The most meritorious productions in the house were some excellent plants of Roses in bloom, not with tiny imitations of bloom, but large heads; the varieties being mostly well-known Hybrid Perpetuals, as Victor Verdier, Senateur Vaisse, Alexandrine Bachmeteff, and Madame Victor Verdier, while the Teas were represented by Madame Falcot, Gloire de Dijon, and a respectable plant of Maréchal Niel, having several blooms upon it. But the principal attraction of the house at the time of my visit was a fine plant of this variety in full bloom occupying the rafters of a part of the roof, and it was well worth a considerable journey to see. I believe the house was only erected two years ago. This Maréchal Niel Rose was budded in 1868 on a Briar stock, and planted out in a border at the back wall scarcely more than a foot wide, but of considerable depth. How the plant flowered last year I forgot to inquire, but it sent up seven branches or shoots, which were all trained in different directions, the longest shoot being 15 feet long, and the shortest 11 feet. Every shoot was laid in to its tip. The united growth of the seven shoots was 85 feet, and at the time of my visit, the third week in April, there were seventy-eight full-blown Roses upon these shoots, and 148 in various stages of the bud. The expanded flowers were as large and full as could possibly be desired, and being all pendant, had the best possible effect, showing that such a position is the best this Rose could have; for in point of colour, form, size, and fulness of centre, I have never seen any specimen at the Rose shows nearly so good as those at Oakwood. I believe the only use made of the knife in its management has been to cut off the flowers, and this year there promises to be an abundance. Mr. Piggott, however, thinks it will not figure as a pot plant, the weakness of the flower-stems always leading to their hanging head downwards, as is the case with many other Tea Roses, including some of the most popular kinds; but when Maréchal Niel is grown as a climber this tendency becomes a recommendation, and in the case now described it would be impossible to suggest an improvement. The long shoots were studded at regular intervals with clusters of buds, having generally one full-blown Rose of the richest gold colour, while the foliage was also all that could be wished for.

As the fine situation and fertile soil favour the growth of most plants, in a few years Oakwood House will be one of the prettiest residences in the neighbourhood; for although

there is not that extensive area of grass land which is to be seen surrounding many mansions, there is sufficient in the principal direction to carry the eye on to other interesting objects, and privacy is as much secured as in the most rural district. The whole estate, or rather the home farm, including the pleasure ground, &c., may be all classed as dressed ground, a considerable extent being in Hops and a large area in orchard, and this within an easy walk of the principal residence. The soil has the reputation of producing some of the best Hops in the kingdom. The rather crooked ungainly poles of the district were being replaced by fine straight ones from Norway, which also had their lower ends charged with creosote in the manner lately described in the papers upon Hop cultivation; and other things were being done, showing that Mr. Wigan was entering enthusiastically into farming and gardening affairs, and he seemed to be well seconded by his gardener, Mr. Piggott, who had the superintendence of the whole.—J. Robson.

VIOLA LUTEA GRANDIFLORA AND VIOLA CORNUTA PERFECTION AS BEDDERS.

I wish to call the attention of those interested in bedding plants to the merits of this Viola, which I believe will supersede the Calceolaria as a yellow bedder. I briefly noticed the plant at page 200, vol. xix., but I find I did not do justice to it then.

The treatment is very simple. In November I put in as many cuttings as I could obtain in a cold frame, with the Calceolarias inserted in October, and not one of the Viola failed, whilst out of nine hundred Calceolaria cuttings I only saved thirty. This is the first time I ever failed with Calceolarias, and I cannot account for the loss, as the treatment was precisely the same as usual. I now intend discarding the Calceolaria as a bedder, for, let the plants be attended to as you will, there is always a blank in the blooming, besides the vexation of their going off in the midst of the season, and a heavy shower of rain takes the polish off Calceolarias almost sooner than anything I can call to mind. Upon Viola lutea grandiflora, on the contrary, the rain has no effect.

I potted the old plants of Viola in November, placing them in a cold frame, and not one died, the protection being a single mat thrown over the frame. Of course the pots during the severe frost were one mass of ice. I therefore believe that if I had had the courage to have left a plant out in the open air it would have lived, as I think frost has more effect on a plant in a pot than on one planted in the ground. With me it has been in flower six weeks—for the last three weeks without protection—and it is a perfect blaze of bloom, and will remain so till November is far advanced. Last year, up to the end of November, frost did not injure the flowers in the least, and when I lifted the old plants they were showing well for bloom.

It is almost impossible to take off cuttings without flowers or flower buds. I believe it will be best propagated in the autumn, as I have struck a quantity of cuttings this spring, and though they are now in flower they are but small, but in all probability they will improve. The flower is of a very striking yellow; the plant of a good habit, easily propagated, and, planted 9 inches apart in the flower garden, it will soon fill up As I before said, the rain damages this Viola the least of anything, the flowers not holding the water. I go over the plants and pick the old flowers out twice a-week; doing so keeps the plants from wasting their strength in perfecting the seed, and sets off the flowers to the best advantage.

As soon as the cuttings are struck I plant them out in a cold frame, gradually hardening them off. I should add that I find autumn-struck cuttings flower earlier than old plants, owing, no doubt, to the shoots employed for cuttings being prepared to bloom. The soil which I employ is a mixture of equal parts of loam and leaf mould, with a little sand. The plant may also be propagated by dividing the roots. When potting the old plants in November I divide them. I was anxious to secure a stock, otherwise I should have left plants out of doors to test their hardiness. The flowers will be found very useful for cutting, for they rise from 3 to 6 inches on the stem, last long, and when mixed with other cut flowers are very effective. I shall be glad to know how this plant has done with others. I have recommended it to all who I know take an interest in hardy bedding plants, and all who saw it at once resolved to grow it.

Viola cornuta Perfection.—This was very good with me last season, but is not so readily propagated as the foregoing; when I say not so readily I mean the same number of cuttings cannot be obtained from it. I wintered a few along with the Calceolarias, but being afraid I kept the stock in pans, just protecting them from frost. This is not an early bloomer, but when it begins to flower it continues, and the colour is rich. I have great hopes of this. Lobelia speciosa is not to be thrown away, but, when everything is said in its favour, towards the end of the season it is blank. Viola cornuta Perfection was good when I took it up at the end of October.—S. Castle, *Gardener to J. A. Bannerman, Esq., Prestwich.*

NEW GRAPES.

I have just (May 1st) been through the admirably-managed kitchen garden of Sherborne Castle, and had the opportunity of ascertaining the merits of two of the new Grapes, about which there have been conflicting opinions. One house was filled with Mrs. Pince, and Mr. Pragnell, the gardener, was loud in its praises as a late-keeping, well-flavoured variety. He stated that he had had it in use until within a fortnight ago. The Vines were breaking strongly, and showing evidence of abundance of fruit. The foliage is certainly very peculiar, not so handsome as that of the Hamburgh and other well-known varieties. Golden Champion he was also loudly in favour of, and, as I saw it, it promised well, but he says it must be grafted on the Black Hamburgh; on its own roots he does not think so much of it, but thus grafted he esteems it as a most valuable Grape.—D., *Deal.*

FORM AND COLOUR.—No. 2.

Form in plants of more lowly growth assumes a subtle and more intricate character, equally powerful, and from its greater variety more generally admired. But here, as in every other instance, form does not stand alone; colour, from which it is always inseparable in plant life, assumes an importance only second to that of form itself. Take, for example, a Fern frond, in the structure of which the greatest intricacy and most exquisite grace are developed; deprive it of its colour, and it becomes of comparative insignificance, because the two things are so entirely inseparable. Orchids, fine-foliaged plants, or any choice stove or greenhouse plants, are just so many examples of the power of form and colour combined, and it is to those species and their varieties in which these are best united to such other excellencies as a robust, free, habit of growth; earliness, lateness, or continuity of flowering, that preference is justly given.

In picking out a collection of plants care should be taken to choose kinds which, as in a Gloxinia, best combine elegance in the form and disposal of the foliage and beauty of the flowers, or which, as among Fuchsias, may by high culture and skilful training be made to assume most symmetrical proportions, imparting an air of perfect grace to the plants, and displaying the flowers to the best advantage.

Even in training a plant, a keen appreciation of the power of form is highly important. A well-grown, well-trained Fuchsia is greatly superior to one of a similar kind which has been allowed to follow its natural bent, and has so become a mere squat bush. The study of form, as naturally developed in the growth of plants, is very useful when rightly followed. To be successful, some tax must be made upon one's judgment in order rightly to read the page of Nature's book opened wide before us. To illustrate this I cannot do better than again revert to the Fuchsia, taken for an example because it is so well known, and its culture so generally understood. To look at a plant of it growing freely, but left untrained, we see little else than a dwarf spreading bush with pendant flowers, anything but suggestive of the appearance of a well-grown plant. Nature in this instance offers to us a plant yielding a profusion of pretty pendant flowers, borne on long flexible shoots, freely produced from the parent stool, yet conveying but a faint impression of the exquisite symmetry to which it may be brought by high culture and skilful training. Whoever first thought of training this plant to the form of a cone, certainly read Nature's lesson aright; but this is not always the case. Take, for example, the Rose. To see its wild luxuriant growth one would hardly suppose it to be possible such a plant should ever be introduced into gardens in the form of a stiff, unsightly standard; but what is more surprising is that this ugly model should be almost universally copied, so that hardly a garden is to be seen without some of these monstrosities. Why this is so I can hardly understand; it certainly points to a

want of originality on the part of us gardeners, and is an instance of fashion or slavish imitation which cannot be too soon forgotten. Surely we have sufficient courage and manliness to own ourselves to be wrong! I for one will own I have budded and planted hundreds of standard Roses, but of my own will I will never plant another, for I am fully convinced that Roses require no assistance from stocks of any kind, but grow and flower as freely and as well on their own roots as they do when budded or grafted upon Briar or Manetti stocks. The man to whom the use of stocks is really beneficial is the nurseryman, simply because their use enables him to increase his stock of sorts, new and old, with the greatest expedition and economy, and so to all Roses not trained to walls I would impart the form of a cone or pyramid, knowing from actual experience how easily and quickly this can be done. No stiffness, no formality is visible in such plants; their tapering forms, laden with fine flowers from the soil in which they grow, upwards to the tops of the plants, offer to the eye rich masses of floral loveliness, to which the beautiful foliage, Nature's foil, forms a fitting background.

There are, of course, many other forms which may be advantageously imparted to plants, according to the respective habits of their growth, which ought always to be carefully studied. Training should really be simply the bringing back of a plant from the unkempt wildness of Nature, so that the growth may be regulated to graceful order. It can serve no good purpose, and is opposed to good taste, to torture any plant into a grotesque or unnatural shape; rather should we strive to produce objects combining simplicity of form with elegance of appearance, and to do this so skilfully as to conceal all evidence of the means by which our handiwork has been performed, for every stake, string, or wire visible when the plant is in its full beauty is a blemish.

Turning now to the study of form in its relation to the design of a flower garden or shrubbery, a knowledge of geometry and the effect of a combination of geometrical forms is important. Masses of flowers tastefully arranged impress the mind favourably, whatever be the form of the beds in which they are growing; but I must qualify this with another truth equally weighty, and that is, when the beds of a flower garden have simple and graceful outlines corresponding well with each other, the plants growing in the beds will certainly be more admired than others seen in a very complicated design. A severely geometrical pattern composed of angular forms, each fitting to the other with the greatest nicety, must always possess a certain air of formality, no matter how skilfully the colours may be arranged. It must be granted that such a design when placed near a noble mansion, and having such accessories as beautiful statuary, balustrading, and vases, possesses much that is stately and dignified, yet these important features rarely, if ever, atone for or cause one long to forget the harsh uncompromising outlines of the beds, which are only to be viewed favourably as forming part of the grand whole; for if we venture to dissect such a garden, and seek for amusement in the study of individual beds, our first impression, probably by no means an unfavourable one, would most likely suffer, and be very much weakened—so true is it that to be really and continuously enjoyable a flower garden must possess other charms than those visible at the first glance. It is, doubtless, very gratifying to hear the exclamation, "How very lovely!" called forth by the first sight of the entire garden, but it is much more so if a closer inspection of the beds sustains the interest of the visitor, making a stroll from bed to bed a thing to be cared for and thoroughly enjoyed. One reason for this is because geometrical precision does not always imply beauty. In a kitchen garden we look for and admire this precision because we are impressed with a sense of the importance of economising all available space; and as angular forms fit best to each other, these are, of course, the right ones to impart to the quarters and borders. But in the flower garden, where luxurious enjoyment, amusement, and repose are sought after, and the stern realities of life are for a time softened or forgotten, graceful forms and soft flowing lines should prevail.

A circle, of all geometrical figures the simplest and most elegant, is undoubtedly the best form for a flower bed. It can be made of any size so as to offer a plain circular mass of colour, or may contain within itself a variety of designs, either simple in form or as complicated as may appear best to the taste or fancy of the designer. Therefore, a design composed of circles and curved "lines of grace and beauty" is quite certain to arrest the attention and to impress the mind favourably. In order that this impression may not be effaced by a closer inspection, there must be no clashing, either in the forms of the beds or the colours of the flowers. A garden having all its beds of an angular form is more pleasing to look upon than one displaying a confused assembly of curves and angles. Purity is one of the first principles of design, and such an effect can only be produced in this instance by associating forms of a similar character, or which shew by their outlines that they spring from a common parent.—Edward Luckhurst.

FOLIAGE OF THE EPIMEDIUMS.

I must call your attention to the beautiful foliage of the Epimediums, of which I send a few specimens. They are principally cross-bred varieties of my own raising, but some of the species are equally attractive.

In regard to Dielytra cucullaria (page 301), I can assure you that it is growing most vigorously. The flowers are concealed by the foliage, which is a defect. Mrs. R. agrees with you about its beauty, so I give in. [Quite right so to do.—Eds.] —A. R.

[The Epimediums do indeed deserve more notice than they usually receive. The varieties you have raised—whether their leaves are self-coloured of the peculiar Epimedium light tender green, or mottled or margined with bronze—are all very attractive, for not only have they the beauty of colour, but of form, pointed heart-shaped, and suspended on such graceful slender stalks. The first that we remember, Epimedium diphyllum, or Twin-leaved, the exceptionally coloured ones, violaceum and pinnatum, are all graceful and charming in many ways.—Eds.]

GARDENERS' CARES.

"So you are going to be a gardener, cousin George, are you? Think well about it before you begin. There is no turning back when you have started on that journey. I know what it is to be a gardener, having had several years' experience. I sometimes wish I had chosen any other employment, but it is too late now, I must go on to the end. Don't be alarmed, I am only telling you what you will have to do and put up with, and if you feel that you cannot, now is your time to change your mind. Gardening is all very well for those who are in earnest, for those who can put their heart into their work; who can bear success with moderation, and failure, which is far more likely to be the result, with patience. Never man yet strode to the heights without many a failure. You will have to place much of your time, and strength, and skill at your employer's service, to work hard, to be up early and late, yet often unable to chronicle to-day what you did yesterday, and very often the morrow is only a repetition. Much of a gardener's work is like a woman's in a house—continual coming and going and doing, very tiring, and little to see at the end."

"It must be less dull than making pins and nails all the days of your life, cousin Mark. It must be healthier out in the sunshine and fresh air, among flowers, and trees, and sweet grass, than confined in a heated factory with the clang and whirl of noisy machinery. I cannot imagine any life pleasanter than a gardener's, and I hope to try it."

"But the sun does not always shine, George, and even when it does, its heat is sometimes a burden; and the trees, splendid enough in their way, cause endless labour on a lawn with their never-ceasing leaf-droppings, and the sweet grass requires more painstaking than a lady's drawing-room carpet, and there is harder and coarser work than tending flowers. And the fresh air may be healthy, but not very agreeable when it comes over miles of frozen moors, with the mercury dreadfully inclined to fall below zero. I can tell you, also, it is not very comfortable working out all day with an east wind drying up your skin, or small rain soaking through your jacket until you can think of nothing but rheumatism. Often it cannot be otherwise; your work carries you from place to place, in-doors and out, so that you are exposed to all degrees of heat and cold—often have to pass suddenly from one to the other."

"I have often heard say, Mark, that it is the happiest and safest of all apprenticeships, the spring time of life spent among spring flowers, no lungs stifled with foul air, no long toiling hours by gaslight."

"It sounds well in words, George, but there is much to learn about gardening, and, unless you have a natural liking for it, it will take you long to learn. You will have to dig."

"Oh! I know how to do that. I have dug up our garden twice every year since I was a little boy."

"Much as a child digs up the sand on the shores at Scarborough, playing with the spade in one hand, never thinking that the other need not be idle and that the foot might bring its force. You would find it very different work if you had an acre of a hundred-years-old sheep pasture to make ready for Potatoes, and there is no escaping this digging portion. It is what all boys are set to at the beginning. I know it was mine, and not very easy. I had to do it over three times with this comment—'Well done is once done.' And when the digging is satisfactorily done there remain a world of things you must try to understand thoroughly. There are many garden labourers but few real gardeners—the fact is, so many men bring hands but no brains to their work. You will have to learn the science of tree and shrub planting—the when, and how, and where, so that you do not remove trees in summer, or thrust their roots into a hard hole scooped out of the heavy soil with a spade, unmindful how they resume their hold of life in the lower world; and you must know when it is best to prune, and remember the best for one plant is not the best for all, so that your subjects lose not a year's growth or die by cruel bleeding. You will have to roll, and mow, and sweep, and keep a dark green velvety lawn equal if not superior to your neighbour's. You will have to rake, and weed, and keep tidy; to sow seeds, and plant out plants, and afford almost invisible supports to weakly stems. You must be able to name seeds by sight, know good from bad, and be capable of fingering the very finest dust without its slipping from you unaware to come up in thick patches with wide unoccupied spaces. You will have to learn all the diversities of plant culture from a Heath to an Orchid, know their growing and rest times and blooming periods, and be ever open-eyed to their peculiar enemies; if you forget these they will multiply with fearful rapidity. Have you heard enough, George?"

"Nay, go on to the end, Mark; you cannot have much more to say."

"You will have to gather fruit for the kitchen; take care in your haste (for kitchen authorities never ask for a thing until they just want it), that you do not destroy next year's blossoms. You will have to pull fruit for the parlour; you must do it if possible without touching; you must not bruise it nor rob it of a particle of its bloom, and there is not a fruit grown, from a Peach to an Apple, over which nature does not spread a delicate touch-me-not hue. You will have to learn how to plan and lay out a garden with a proper regard to the fitness of its surroundings; so to harmonise colours that the gay picture you paint on the summer lawn shall offend neither the ancient law of order, nor the changing rule of fashion, nor the true artist's taste. Woe to your good name if you are colour-blind. Nor have you done with flowers yet. You will have to enter into closer and more vexatious relations with them. You will have to arrange flowers for drawing-room and dinner-table decoration. Don't send your best and fairest for the latter purpose, to mingle their sweet perfumes with the smell of fish and soup, and lose their charms too rapidly in the heated atmosphere which floats over a well-prepared dining table. You will have to put together flowers for button-holes, for ball and brides' bouquets, to manipulate the bits of living mosaic that they shall form one complete whole, free from vulgar gorgeousness and tame insipidity. All this you will have to learn, much as a lawyer's clerk, without being taught, and with but little time for book lore; for if you do but half your duty you will fall asleep on winter evenings before you have turned over many pages. The fresh air you spoke of gives an appetite to growing lads, which when appeased induces slumber—slumber so refreshing that now, as in the old time, a king might envy."

"Well, there is variety in your long list, cousin Mark; no fear of *ennui*."

"But I have not done yet; the worst is to come. You will have to turn out at all hours, Sundays not excepted, and in all weathers, to learn the economy of stove fires—how to obtain the most heat out of the least fuel. You must never make a mistake in this quarter, never throw more coal or cinders on your fire than will be needed, or leave your dampers out when they would be better in, or the valve of your ashpit door open with a fire burning brightly. At the same time you must not let your fire go too low lest a dead calm settle on the water in your boiler, and this calm be communicated to the should-be ever-circulating liquid in your pipes."

"Really, Mark, an uneducated boy could do that. Why should a gardener be troubled?"

"When you rise to be head man, George, if you ever do, it will benefit you little to have fifty stokers under you if you do not fully comprehend the principle of heating glass houses; nine times out of ten this is only gained by practice. I cannot think why so many should fear to soil their hands with the coal and smoke of an island home, half the wealth of which is earned by its liberal consumption, as though when the work was done they would not wash white again."

"Anything more, Mark?"

"Do you care to know, George, or have the fires burned out your enthusiasm? You will be expected to interpret aright the winds, and stars, and sky; to follow all the fickle changes of an ever-changing climate; never to let fire heat and sun heat meet in your plant houses; never to let your thermometer rise above or fall below a certain mark—this not only on working days in working hours, but day and night, feast day and fast day, from the beginning of the year to its close. You will soon know the winter stars right well, and be very familiar with the crunch of the crisp snow under your feet."

"Have you done?"

"No. You will have more than yourself to consider and to please. I have heard young girls say they would not settle in the best place in the world if there was more than one mistress, but a gardener seldom has the good luck to have but one master. To say nothing of master's wife, there is master's cook, a terrible power in a place, an authority not to be slighted nor disregarded. And then, George, there is no use in complaining when things go the wrong way, as they are sure to do at times; no amount of grumbling can lighten your real or fancied load, or ease the hardship of your position. Of all men gardeners are most subject to ignorant worrying, and from their natural temperament they are the least able to bear it. They are said to have their full share of perseverance, but less of patience. They suffer often from a want of confidence on the part of their employers. This unpleasant feeling sours the temper and spoils the character, and makes work, otherwise easy and pleasant, heavy and disagreeable. There is but one escape from this torment—to grow up and out of it, and in the growing and doing to keep a name above blemish or reproach, not more for those around you than for yourself, so that you lower not your self-respect."

"It is a sombre picture you have drawn, Mark, yet I still think I shall try it. I fancy there is a reverse side you have not turned up; it cannot be all work, work, too, in the shade; there must be some hours of quiet rest, and gleams of sunshine, rest not overpowered by sleep, and sunshine that strengthens without being oppressive."

"Yes, you are right. Shall I tell you what you will gain, what you cannot help to gain in a greater or less degree?—a deeper inlook into Nature's secrets, a quicker ear to catch the music of warbling birds, of gurgling brooks, of rustling trees; much knowledge expressed or unexpressed of the ways and doings of insect life; a warmer sympathy with the humble living things that surround your path; a fuller appreciation of Nature's charms, those touches of beauty which make glorious the early morning and the long evening twilight, and leave an after-glow of radiant thoughts to brighten the long winter nights."—MAUD.

NOTES AND GLEANINGS

WE have received from Messrs. CRIPPS & SON, Florists, Tunbridge Wells, some very beautiful coloured portraits of three new HARDY HYBRID CLEMATISES, quite distinct from all others, and amongst the most attractive of this very beautiful and deservedly popular race of hardy climbers. They commence blooming towards the end of May, and continue in flower until the buds are destroyed by frost. Under glass they do not develope their rich tints so readily as if grown in the open air. Each kind has been awarded a first-class certificate by the Floral Committee at South Kensington. One named *Lady Caroline Nevill*, has well-formed lanuginosa-like flowers, from 6 to 7 inches in diameter; colour delicate azure blue, with a broad purplish lilac longitudinal band in the centre of each petal; foliage and growth of lanuginosa. The second, *Star of India*, has flowers 4 to 5 inches in diameter; colour rich violet purple, with a rosy purple band in the centre of each petal; foliage and growth of C. Jackmanni. This is undoubtedly the most effective of the dark-flowered hybrids. The third is *Tunbridgensis*, having flowers 4 to 6 inches in diameter, of perfect form; colour dark blue, shaded with purple, midrib dark purple. This is also of the Jackmanni class; it is a very abun-

dant bloomer, and will make a most useful bedding plant. At the same time Messrs. Cripps sent us a coloured drawing of a leaf of CATALAPA SYRINGÆFOLIA AUREA, which they consider the most valuable hardy ornamental-foliaged tree that has been sent out for several years. The Catalpa syringæfolia needs no description, but the variety, with the same robust growth and habit as its parent, has foliage of rich glossy yellow. Planted in the full sun, its beauty becomes far more satisfactorily developed than in a shady situation, and the leaves will neither curl nor burn, as is the case with many yellow-leaved and variegated plants.

—— AT the autumn show of the METROPOLITAN FLORAL SOCIETY, to be held at the Crystal Palace, August 29th and 30th, the following extra prizes will be offered:—By Mr. John Keynes, Salisbury, for the best twelve blooms of Dahlias (distinct), sent out by him in 1870 and 1871, first prize, £3; second, £2; and third, £1. By the Rev. E. Hawke, Willingham Rectory, for the best seedling Hollyhock, three blooms, first prize, 10*s.*; second, 7*s.*; third, 5*s.* The same variety not to take more than one prize.

—— WE regret to record the death of MR. WILLIAM WILSON, the eminent bryologist, which took place at Warrington on the 3rd of April, in the 71st year of his age. Mr. Wilson is chiefly known as the author of "Bryologia Britannica," the standard work upon British Mosses, which was published in 1855, and of which a second edition was in contemplation at the time of his decease. He took a high place as an authority upon Mosses among continental botanists, and was in intimate communication with them. In the earlier portion of his life he devoted much attention to British plants generally, and scattered papers in his name, often containing valuable observations in structure, may be found in the "Phytologist," and other botanical journals. He is frequently quoted by Sir W. J. Hooker, in the "British Flora," and contributed many specimens, accompanied by careful manuscript notes, to the Hookerian Herbarium.—(*Nature.*)

—— THE principal object of interest at the *soirée* of the Linnean Society on the 26th ult., was again Mr. Wilson Saunders's collection of MIMETIC PLANTS, which was even more remarkable than last year. The following is a list of the pairs exhibited:—

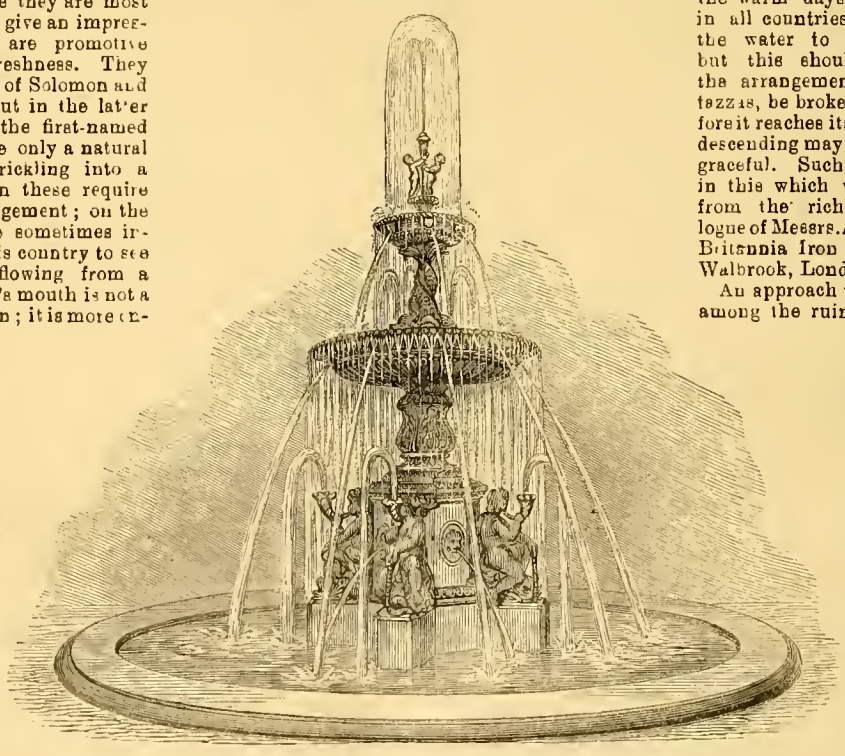
Olea enropæa	Oleaceæ
Swammerdamia antennaria	Compositæ
Anemone coronaria	Ranunculaceæ
Pelargonium triste	Geraniaceæ
Osmanthus heterophyllus	Oleaceæ
Ilex Aquifolium var.	Aquifoliaceæ
Gnaphalium orientale	Compositæ
Lavandula lanata	Labiatæ
Iris pulchella	Iridaceæ
Dicrypta iridoides	Orchidaceæ
Pothos argyrea	Araceæ
Peperomia arifolia	Piperaceæ
Adonis autumnalis	Ranunculaceæ
Pyrethrum inodorum	Compositæ
Heterotropa asaroides	Aristolochiaceæ
Cyclamen persicum var.	Primulaceæ
Oxalis Plumieri	Oxalidaceæ
Crotalaria laburnifolia	Leguminosæ
Gentiana lutea	Gentianaceæ
Veratrum viride	Melanthaceæ
Gymnostachyum Verschaffelti	Acanthaceæ
Echites rubro-venosa	Apocynaceæ
Grevillea sp.	Proteaceæ
Acacia sp.	Leguminosæ
Rosa sp	Rosaceæ
Xanthoxylon sp.	Xanthoxylaceæ
Euphorbia mammillaria	Euphorbiaceæ
Apteranthes Gussoniana	Asclepiadaceæ
Daucus Carota	Umbelliferæ
Pelargonium rutæfolium	Geraniaceæ

—(*Nature.*)

FOUNTAINS.

FOUNTAINS have ever been present in the gardens of warm climates, and there they are most appropriate; they give an impression, and really are promotive of coolness and freshness. They were in the garden of Solomon and of Pliny's villa; but in the latter certainly, and in the first-named probably, they were only a natural spring of water trickling into a stone basin. Even these require taste in their arrangement; on the continent they are sometimes indecent; and in this country to see water constantly flowing from a lion's or a monster's mouth is not a pleasant association; it is more endurable from the mouth of a dolphin, but far better from the mouth of a slanted urn.

Fountains, however, are usually considered as ejections of water in a stream into the air, and a more absurd, tasteless, expensive difficulty cannot be conceived, whether it be like the performance of a large squirt, as in the Temple Gardens, or in a column of water thrown up to a height of 267 feet, as the Emperor Fountain at Chatsworth.



Fountains in this country should be inactive, except during the warm days of the year, and in all countries they should toss the water to a small elevation, but this should in falling, by the arrangement of a series of tazzas, be broken into cascades before it reaches its final basin; water descending may be always rendered graceful. Such an arrangement is in this which we have borrowed from the richly-illustrated catalogue of Messrs. A. Handyside & Co., Britannia Iron Works, Derby, and Walbrook, London.

An approach to this form exists among the ruins of Pompeii, and it is a form which would not be misplaced near a residence, or in the centre of a lawn. All fountains, however, we think, are most suitably placed within a group of trees, for the water harmonises with the coolness which their shade secures.

Some of the most appropriately ornamented of fountains were constructed by the Greeks. One especially is described with the water flowing from the mouths of dolphins.

CYPRIPEDIUM NIVEUM.

THE accompanying is a portrait of the plant exhibited at the Floral Committee of the Royal Horticultural Society, on April 19th, by Mr G Ward, gardener to D. Berrington, Esq., Pont-y-Goitrea, Abergavenny, and of which we then observed: This

was remarkable in every sense—remarkable for its free flowering, one of the specimens having ten flowers, which from the compactness of the plant formed quite a close mass of flowers, and remarkable from its entire distinctness of colour from any other Ladies' Slipper which we know, being pure white, with some faint dottings of purple, externally more marked, and with delicate lemon blotches in the lip. This received a first-class certificate.

We wrote to Mr. Ward for further particulars, and he has obliged us by the following reply :—

"We received a quantity of C. niveum from the west coast of Siam, in an imported c ndition, in the June of last year. I immediately tied them by their heels, and hung them up in a shady part of the East India house for about a fortnight, just to acclimatise them, and as they all began to show signs of activity, I potted them in the following materials, which I find better than that usually recommended for Cypripediums — viz., three parts chopped sphagnum, one part broken potsherds, and a dash of sand. I possibly could cram their roots into, and then they began to grow magnificently—in fact, they beat any of the imported growths, so that you would hardly recognise them.

"I give them a syringing overhead nearly every bright morning, not sufficiently heavy to wet the compost they are in, missing it on dull or heavy mornings. I usually let them get nearly dry, and water about every third day. I find them very easy to manage.

"I have a dozen plants in bloom now, some with two blooms on a spike, and some of a much purer white than those exhibited. They are still in the East India house, the night temperature of which is 65° to 70°, day temperature about 80° to 85°. The duration of the flowers is about six or seven weeks.

"There were ten flowers on the plant when it started from me, but I was informed that two were shaken off during transit."

Cypripedium niveum.

Cypripedium niveum—Flower.

BEET AS A BEDDER.—Among the variety of opinions advanced about Beet as a bedding plant, I have not seen its advantages as a spring bedder sufficiently recognised. I have now a bed, of which the centre is Beta brasiliensis, a small red Beet, transplanted from where it stood the winter, and the edging Golden Feather Pyrethrum, just as it stood the winter, now the richest golden colour possible. This has been clipped into shape. I have also tried Beet, wintered in pots just as sown, so thickly that it has not had room or soil to grow more than 3 inches high. This would form a very pretty spring edging to yellow Pansies or Myosotis, and would not grow too large before summer plants displaced it. Mine has not been planted out thickly enough, but I shall try it again next year.—KITTIE.

FRUIT PROSPECTS.

AT present there is in the gardens here an excellent show for fruit; almost every tree in every aspect, and whether standard or otherwise, is very full of bloom. Apricots were the first to blossom; and the weather being at the time dry though cold, the fruit has set very thickly, and much thinning will be necessary. Some of the fruit are a little discoloured by frost.

Of Peaches I may say they have set an abundant crop generally, and the wood has not been injured by the severe frost. The Shanghai, a very large latish Peach, is a tender-wooded sort and shy bearer. The fruit has no particular merit. Taking it altogether it is not worth growing, as unless the tree is particularly healthy the fruit drops off before ripening. Nectarine trees are loaded with fruit. If Peaches set well Nectarines are pretty sure to do so, being the hardier of the two. Dessert Plums on walls have not bloomed so freely as last year, though plenty of fruit have set, and the late copious showers will help to swell them off. Commoner Plums, such as Orleans, Damsons, and other kinds, which have been in full bloom during the heavy rains, will, I think, have a heavy crop of fruit. It is too early to judge of the Apple crop; there is, however, an abundance of bloom. Of most sorts of Pears there is a good crop of fruit swelling off, particularly Easter Beurré on a south wall, Beurré de Rance, Glou Morçeau, Passe Colmar, Althorp Crasanne, Brown Beurré, and Beurré d'Amanlis.

Of Maria Louise there will not be an average crop, and Suffolk Thorn and Winter Bon Chrêtien are rather cut up both in foliage and bloom by the late spring frosts.

Here we have large Red and White Currant trees on walls in almost every aspect. These, and others in the plantations, could not possibly show a more satisfactory condition for fruit. Cherries, also, promise plentifully, and Gooseberries are swelling off an excellent crop, although the tops of many of the trees have shed their fruit through frost. Of Black Currants there is a promise of a very heavy crop. I think there is no doubt that if quantity of fruit is the object there is nothing like letting the Black Currant establish itself as a large tree. At this place most of the trees showing fruit are from 6 to 8 feet high and two-thirds as much through; I am told they always have borne from top to bottom, and bushels of fruit are regularly produced. The Black Currant no doubt likes either a retentive soil or a moist situation, and here it is quite at home, as close by one side runs the river Lea; a branch from it is taken through the kitchen garden on the other side of the Currant plantation, and the trees thrive remarkably well. Red Currants, too, are very flourishing in such a place. I cannot help thinking that where space is an object for economy, and ornament a thing to be promoted, the Red Currant should be planted and trained to stakes as a hedge about 4 feet high, the shoots crossing each other like lattice-work. They take up little room, produce quite as abundantly, and are very handsome and ornamental all the summer, particularly when in fruit, and when growing by the walks there is no harbour by the trees for birds; the fruit is likewise better flavoured in consequence of having an abundance of sun and air, and when it is to be preserved for tarts can be netted up easily and without injury to the trees.—Thomas Record.

P.S.—In my notes on thinning Grapes, page 301, in the third and fourth lines from the bottom "*string*" should be "strig."—T. R.

WORK FOR THE WEEK.

KITCHEN GARDEN.

Some of the most forward of the early-sown *Cauliflower* and *Cabbage* plants will now be in a fit state for final transplanting, which should be done the first favourable opportunity, and in the event of dry weather prevailing they must be kept well supplied with water. Proceed with the pricking-out of *Broccoli, Brussels Sprouts, Savoys*, &c., as they become large enough to handle, and also of *Celery*. Sow full crops of *Dwarf Kidney Beans*, and *Scarlet Runners* if not done. Tie-up for blanching a few of the largest Bath Cos *Lettuce* that have stood through the winter; these should be kept well supplied with water if necessary, in order to induce rapid growth, which is essential to the production of that tender crispness so prized in this variety. Transplant *Leeks* from the seed-bed as soon as they are large enough, in rows 18 inches apart, and 9 inches from plant to plant in the row. The soil cannot be too rich. Keep up successional sowings of *Lettuces* and *Turnips*. Continue to earth-up and stake *Peas*, but previous to earthing-up let them be well thinned out, if too thick. This is a more important consideration than is generally allowed. We often sow thickly in order to insure a crop, but if all come up and are left to grow they will grow, bloom, and produce a number of small pods, but after a gathering or two they cease to yield, whereas if well thinned-out a greater weight of finer pods is produced, and they will continue to grow and bloom so as to produce a succession. One of the chief merits of that excellent Pea, the British Queen is, that it continues to produce in succession like a Kidney Bean, and this is because, being a large strong-growing Pea, cultivators are accustomed to give it so much more room. The same principle is applicable to other varieties, and eight Peas of the smaller kinds, and from four to six of the larger in the space of a foot, will produce more and finer pods than three times the number in the same space. *Radishes* will now require to be sown very often in smaller quantities; birds are apt to be very troublesome to these, and where a constant succession of salads must be kept up, I would recommend the adoption of a plan which answers well. A couple of portable frames 6 inches deep, covered over the top with wire, each about 4 yards square, are placed over Radishes, Lettuces, &c., and as soon as the plants are well above ground, another sowing is made and the frames moved to it. In dry weather it is advantageous to give Radishes a good soaking of water at about nine o'clock in the morning when the sun is shining upon them; it makes them tender. Encourage *Cucumbers* for the ridges; let them be kept near the glass where they can have abundance of light and air to cause them to become sturdy plants for turning out. The ridge should be placed in a sheltered situation. The method of preparing it is as follows:—Dig a trench about 1½ foot deep and 3 feet wide, fill-up with well-fermented materials 2½ feet in height, cover the whole with about a foot of light rich soil, then mark out the places for the plants about 4 feet apart, on which set the hand-glasses; turn out the plants when the soil becomes warm, which will be in the course of a few days if all go on well. Give a little tepid water around the ball to settle the earth. Let the glasses be covered with single mats at night till the plants begin to grow, when they may be dispensed with.

FRUIT GARDEN.

Stir the surface of the earth well amongst Strawberry plants, and if in a very dry state give them a liberal supply of water. Have ready a well-prepared piece of ground for planting out, as they are brought from the forcing structures, all the pots of forced Strawberries; plant them 1 yard apart for a supply of strong runners for next year's forcing, and the crops the next year from those left in the ground are superior to those grown in the usual way; they will require several applications of water after planting to give them a fair start.

FLOWER GARDEN.

That favourable period following a weary time of wet is always one more or less busy to the gardener, a day of sunshine then reveals numerous faults against the fair propriety of the garden. Weeds appear provokingly numerous, the rain has left a pool of slime here, a mound of sand there, and disarrangement everywhere, which must be repaired without loss of time. Flower beds should now be put in a condition suitable to receive the fragile plants they are intended for, but unless protection can be afforded it would be unwise to venture on planting for a week or two. No rule can be laid down for regulating distance in planting, a proper consideration of the habit of the plant must determine their distribution. Avoid the extremes of thick or thin planting. In the distribution of colours, if the garden is large the central and marginal beds should be defined with positive colours. For particular information as to their systematic arrangement, a work by Chevreul may be consulted with advantage.

GREENHOUSE AND CONSERVATORY.

The preservation of the blossom of decorative plants for a greater or less period greatly depends at this season on the regulation of the atmosphere. Accustomed as our plants have been lately to humidity and gloom, the glare of sunshine and the dryness of the air will destroy them in a very short time. To remedy this, keep the paths of the houses damped during the day, and employ shading materials. Conservatory beds will require water, as also all large plants in tubs; Camellias, particularly, being in active growth, will require a liberal supply; a watering of manure would be advantageous. Oranges, Oleanders, &c., usually removed out of doors, should receive a top-dressing of soil, in which sheep's dung is an ingredient. See that all other plants are carefully staked and tied before removal. The Pelargoniums will now be showing bloom, if not expanded. As soon as this occurs, unless of gross habit, a little weak and clear manure water may be given. Such may also be applied to the Azaleas making their wood, also to the Camellias. Let a reserve stock of Pelargoniums, Calceolarias, Verbenas, Heliotropes, &c., be potted off in 3-inch pots, and kept by themselves. Such will serve to maintain continued gaiety throughout the latter part of the summer and autumn. Fuchsias for late blooming must not be kept too warm; they should be placed in a moist, shady house, where they will grow much more freely than in a high temperature.

STOVE.

Attend to shifting specimen plants of Clerodendrons and other gay and popular stove plants. Observe to fumigate frequently in a light way; heavy fumigations, caused, of course, by delaying this necessary precaution, frequently do serious mischief. Go over climbers frequently, so as to regulate their growth and prevent confusion, which, without attention, soon happens. Syringe and shut up early on the afternoons of bright days, and be as sparing as possible in the use of artificial heat. Examine the plants individually every alternate day, and water such as require it, but be careful not to give too much to those starting into growth. A cool atmosphere will greatly assist in prolonging the beauty of such as are in bloom.

PITS AND FRAMES.

Remove all plants intended for bedding-out, and let them

remain under the protection of cold frames for a week previous to planting. This preparation will better enable them to withstand unfavourable weather. Do not allow them to sustain any check through want of pot room or carelessness in watering.—W. Keane.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

A few glorious days after the rains, and as the wet had hardened the surface among most growing crops, we took the opportunity of the dryness to stir the surface soil with a light fork or hoe, according to the size of the plants, the fork being used for Cabbages, Cauliflowers, Beans, Peas, Potatoes, &c., and the Dutch hoe for Onions, Carrots, Parsnips, and young crops of Spinach, Radishes, Turnips, and Lettuces. To save room in limited space, we often transplant Lettuces freely. Had we abundance of room, except for the earliest out-door crops we would sow all the summer every ten days or so, and that very thinly, and transplant none, but thin out to the requisite distance. This is the simplest and best mode of obtaining fine succulent crisp Lettuces. The great secret to obtain a continuous good supply in little room, is to sow often and but little at a time. It is of no use to talk about the barrowfuls that could not be used taken to a rubbish heap, if you cannot send a dish to table as wanted. A constant unbroken succession is better than great quantities at a time.

Our planted-out winter Onions are looking very well, and if we had a little guano or superphosphate by us, we would have given them a little between the rows, so that the rains should have washed it in. We may do so still, as it very much increases the size of the bulbs, but too much must not be given. A very little guano, if good, will go a long way. We have never used much artificial manure ourselves. The safest is ground, broken, or dissolved bones. We have seen some samples of guano this year that lead us to think that its heyday is past, they seemed so alike in texture, feel, and scent to the concentrated manure of years ago.

We have tried in a small way most of the *artificial manures* advertised, and sent out in little tubs and canisters, and we found them all good, and we could recommend them to amateurs who did not like the trouble, or had not the convenience of having rotted manure, or manure water tanks; but we would urge the importance on all our readers who employ artificial manures, of using them sparingly, and always under rather than above the strength recommended by the vendor or maker. Even the vendors can scarcely find fault with us in saying this much, for our limited experience would lead to the conclusion that most of the canisters of artificial manures are stronger rather than weaker than they are represented to be. It would not suit us to mention names, but some time ago an enthusiastic amateur who had built a greenhouse, and paid handsomely for a collection of the best Azaleas and Camellias, ruined them by a too free application of these canister manures. He was, of course, wroth at the result, he was to expose, to prosecute, and all the rest of it, but he would only have exposed his own folly. Because one ounce was to do so much, he argued four or six ounces must do still more good, and thus he killed his plants. The experience was costly, but the lesson will never be forgotten. Our advice then is, use all artificial manures with caution, and not too strong. Even good soot, that valuable manure which most of us can command, must be used sparingly, either as powder or forming the strength of a liquid. It is always safer to use four weak applications than one very strong one.

Planted-out on a rich border a number of Celery plants, to be lifted with large balls when strong. Some we might have transferred to the beds at once where they were to perfect themselves, but the plants are now near the water tanks, and will give us less trouble for a month or so. We laid hurdles over them, with a few branches drawn through them, so as to afford a flickering shade, and then in a cold night, if necessary, we can throw a mat over the hurdles.

Put a lot of Kidney Beans in small pots in a frame, to be transplanted when of a good size, and these will come in a little sooner than those sown in the open air.

Removed the glass from a lot of our earliest Potatoes, and put hurdles across instead, so that we could give a little protection if necessary. Moveable frames are in this respect better than pits, as the frames can go on another bed, such as for Cucumbers or anything else. When pits are used for early crops, we cannot move them, but we often move the lights and use them for temporary purposes. A rail at the back and front, and a board set on edge, soon form a box-bed for lights to be placed on, and thus many things can be forwarded in cold places.

FRUIT GARDEN.

We find a number of twigs on our Apricots and Peaches out of doors, now that the sun is gaining power, are showing that they have suffered from frost more than we expected. In these sunny days we have given more air, and have kept houses damper by sprinkling paths, &c., as this sprinkling and even syringing should be much regulated by the weather. We have little faith in regular syringing or path-damping in very dull weather. It is in every way better under such circumstances to let the temperature fall a little.

ORNAMENTAL DEPARTMENT.

We have had the most of our walks fresh edged—that is, the grass has been cut with our edging iron. This secures a straight line all the summer, and the shears do their clipping better. Mowing and cleaning, and preparing flower-beds have taken up much time. Some persons are planting-out in their flower beds, we prefer waiting from a week to a fortnight. In fact, our beds are not yet ready if we wished to get at them. Our place is very exposed, and we gain nothing by early planting. Pricking-off, potting-off, and planting in temporary beds, have taken up a good deal of our time, as well as potting what was intended for corridors, conservatory, &c. Now is the best time to regulate, trim, and cut Box edgings; the fresh growth comes so green. If the work is done much earlier, there is a risk of blackening or whitening from frost. Camellias and Azaleas done flowering can scarcely be moved too soon into a somewhat close house by themselves.—R. F.

TRADE CATALOGUES RECEIVED.

E. G. Henderson & Son, Wellington Road, St. John's Wood, London, N.W.—*Spring Catalogue of Bedding and Softwooded Plants.*

J. Carter, Dunnett, & Beale, 237 and 238, High Holborn, London, W.C.—*Catalogue of Bedding and other Plants*, 1871.

F. & A. Dickson & Sons, 106, Eastgate Street, Chester.—*Abridged List of Bedding Plants.*

TO CORRESPONDENTS.

N.B.—Many questions must remain unanswered until next week.

Sub-tropical (*Trotty*).—Plants of the tropics or elsewhere that require protection during the chief part of the year are cultivated in the open ground here during such months as are sufficiently warm, and such gardening is termed sub-tropical. The book you name is out of print, and there is none other published with coloured illustrations. For cultural purposes, lists of varieties, &c., our "Garden Manual," and "In-door Gardening" and "Out-door Gardening," contain much information.

Cowslip and Primrose (*Fox*).—Your specimen is the Oxlip, Primula elatior. Exposure to light, and moderately rich soil, induce the highest colour.

Wholesome Fungi (*South Yorkshire*).—"Eatable Funguses of Great Britain," with coloured plates and full descriptions, is a book published at our office. You can have it free by post if you enclose 7*s.* 8*d.* with your address.

Orchard-house Peach Trees Diseased (*Gravenhurst*).—If your Peach trees had been out of doors we would have said that they had been killed by the frost, as a number of ours are. As it was in an orchard house we are less sure, but it is likely death arose from the same cause, as the wood is rather soft and spongy. We have had wood affected in the same way from sulphur-smoking, and from washing with too strong paints and washes, and in the latter case the wood next the bud would suffer most, as in one piece yours seems to have done. Where the wood is killed right through you can do nothing with the wood above. Where it affects only one side of the shoot above, there will be space enough left to keep up a circulation of juices.

Plants for the Back Wall of Cool Vinery (*Constant Subscriber*).—You do not say whether frost is excluded or not; cool vinery is a vague term. We presume frost is kept out, in which case for winter flowering nothing would suit so well as Camellias. Besides these we can only recommend Oranges for the back wall of a vinery. Six Camellias are—Bealii, Bonomiana, Monarch, Valtevaredo, Mathotiana alba, and Conspicua.

Stephanotis floribunda Seeding (*R. H.*).—It is not unusual for this plant to fruit and produce perfect seeds; indeed, we have seen large plants which had been raised from seed in this country, and they were three years old. Only last year we saw many dozens of seedling plants from home-saved seed. The plant first ripened seeds in England about ten years ago.

Camellias and Azaleas after Flowering (*H. H. R.*).—After flowering they should not be put to rest, nor be left unwatered, but should be kept moist by being sprinkled overhead, and never allowed to want for water at the root; but do not supply any until the soil becomes dry, and then give plenty, and always before the foliage flags. They should also have a closer atmosphere and slightly higher temperature to insure free growth, which effected, they should have more air and a drier atmosphere to secure the ripening of the wood. After the buds are set they can hardly be kept too cool and airy. Being evergreen, they require water at all seasons. You may procure seed of Primula cortusoides amœna of any of the principal nurserymen or seedsmen who advertise in this Journal.

Pears not Setting Fruit (*H. R.*).—We think your trees require rich top-dressings and copious waterings. Give these, and they will, no

doubt, fruit. We cannot account for the leaves turning black, but it may have been caused by the late cold weather. We have some similarly affected, and we cannot account for the occurrence in any other way. We presume you practise summer-pruning. Your light soil is not favourable for Pears. They will only fruit by liberal treament, rich top dressings, and good waterings in dry hot weather.

Placing Soil against an Elm Tree (*A. L. B.*).—Placing soil against an Elm, or indeed any kind of tree, is very injurious, especially when the soil is laid to a considerable depth against the trunk, and covers the roots deeply. We have thus known trees of considerable age killed—in fact, the older they are the more injurious is the covering of the roots deeply with soil. If you wish to save the tree the only plan is to remove the soil down to the roots. Only last autumn we removed some soil about 4 feet deep from around some very large and fine Sycamore trees, the soil having been laid on grass that had been originally under them, and we noticed that not a root was found in the 4 feet depth of soil, none being discovered until we came to the grass, or where they were first formed. It was removed to save the trees, and from their present appearance we expect a growth this year equalling that of the previous four years. The stems of all trees should stand, or be raised above the surrounding level, on a slight mound, just as we find them in the best specimens natural or planted. We say remove the soil at once.

Climber for a South Wall (*Idem*).—Caprifolium tuteum is a good yellow Honeysuckle for a south wall, but, as you say, yellow Jasmine is too poor, though you do not say which kind it is, for we consider Jasminum revolutum fine for a south wall. We fear the Honeysuckle will not suit. Buddlea globosa has pretty yellow flowers, and Garrya elliptica greenish yellow catkins; both of them suit a south aspect. They are not climbers, but very suitable. They are evergreen. The climate is too cold for the Bignonia, but it will no doubt flower well after a time, thinning out the shoots so as to secure the thorough ripening of the wood.

Sparrows Destroying Wistaria Flowers (*Wistaria*).—We do not remember to have noticed the liking of sparrows for the flowers of this plant, and we should think, as you do, that "the birds have been in quest of insect pests." We have known all the flowers of the Wistaria fall after a sharp frost.

Chaffinches in a Garden (*S. B.*).—Chaffinches are destructive in a garden, inasmuch as they pull up and of course destroy the seeds of Cauliflowers and all the Cabbage tribe, Turnips, Radishes, Lettuce, &c., just when they are appearing aboveground; but they are very useful in a garden, as they live for the most part on insect food. We never destroy them, nor, indeed, any of the feathered tribe We ward off the attacks of the Chaffinch by coating the seeds with red lead, just making them red all over, and moistening the seeds first with water so as to make the red lead adhere to them; though this costs a little trouble it is not half so troublesome as covering with netting. The seeds come up well, not one being taken by the birds. In this way we save the seeds and have the full benefit of the birds. Even the sparrow consumes many insects infesting trees and plants, rearing its young solely on insect food.

Soot Water for Syringing (*F. E P.*).—It is first-rate both for preventing and destroying insect pests, but is not safe for plants in flower, as it will discolour the blossoms; nor can it do much good at such a time, as it is then necessary that they should be kept dry.

Lomaria gibba (*Idem*).—It is a stove Fern, but we have grown it in a vinery in summer, and have also wintered it safely in a vinery, frost being excluded; indeed we have in a stove two fine plants which were so grown for over eighteen months.

Pear Leaves Blackened (*R. S. F.*).—The leaves enclosed to us are blackened by cold. There is no remedy but to afford protection on frosty nights and in cold weather Your only remedy is patience. Finer weather will make all right, though the blackened leaves will not recover, and when the weather is more settled remove the blackened leaves by degrees, taking the worst first.

Planting Bedding Pelargoniums (*Kittie*).—One foot apart every way is a very suitable distance. We cannot account for the Coronillas not flowering. They do well in a cool greenhouse; perhaps yours are kept too warm. There is no book treating of what you require, nor would it be of any great value. Stopping and disbudding are only useful in certain stages of plant growth.

Picea Pinsapo Bearing Cones (*Lincolnshire Vicar*).—It is not unusual, but the seeds do not as a rule become perfect in this country. If the seeds were good they would have a marketable value, but not great, as continental seed can be obtained at a low price.

Polemonium cæruleum variegatum—Treatment of Forced Roses (*B. B.*).—It attains a height of about 9 inches, and would form a good edging to small beds, with Coleus in the centre. Roses which have flowered in the greenhouse should be hardened off and placed out of doors in an open situation, the pots plunged in ashes, and water given as required throughout the summer, with frequent sprinklings overhead. Repot them in September, and remove them to a cool house in October, pruning in November. From the leaf we think your Acacia is A. lophantha, but we cannot name plants from leaves only. Flowers as well as foliage are necessary for identification.

Dwarfing Rhododendrons (*F. G.*).—We do not approve of cutting down such kinds as R. Nuttalli, Edgworthi, Falconeri, and javanica, though it is quite safe to do so yet they must grow a year or two before they will flower again. Copper wire tied round would cause them to break lower down, but it would be at the expense of the part above. We do not know of any other plan, and do not commend these. Good large plants are far better than small; indeed they are not in character until they are of good size. If your plants are well furnished they might readily be exchanged for smaller by applying to some of the principal plant-growing nurserymen.

Climbers for Summer House under Trees (*A. B. T.*). — It is very difficult to grow climbers of any sort under closely planted trees, the roots of the latter making the soil so dry in summer that the newly-planted climbers have a very poor chance. The different kinds of Ivy are the best we know. Traveller's Joy (Clematis Vitalba) we have found useful, also Virginian Creeper.

Sulphate of Iron for Peach Trees (*C. R.*).—Your query was answered some weeks back, and we can only now say that we do not know anything of sulphate of iron as applied to Peach and Nectarine trees.

Fraxinella Raising from Seed (*Idem*).—The seed may have been bad, for it is difficult to obtain it sound. It should be sown as soon as it is ripe in rich deep soil but on a dry bottom, and covered about an inch deep with fine soil. The seed will not vegetate until the following April or May; and if you purchase seed, or sow in spring that of the previous year, it will not vegetate until the April following, or for twelve months, and scarcely one seed out of a hundred will grow if kept out of the ground until spring. The seedlings should remain where sown two years, and then be planted out where they are to remain. They usually flower the third year.

Plants for a Small Conservatory (*A Constant Subscriber*).—We name a few, and principally winter-flowering, as you desire such. Acacia armata, A. oleifolia elegans, A pulchella, Chorozema cordatum splendens, Coronilla glauca variegata, Correas Brilliant and magnifica, Cyclamen persicum, Cytisus racemosus, Libonia floribunda, Linum trigynum, Luculia gratissima, Monochætum ensiferum, Primula cortusoides amœna, Rhododendron jasminiflorum, Princess Alexandra, and Princess Royal, Vallota purpurea; Azaleas Brilliant, Chelsoni, Criterion, Duc de Brabant, Etoile de Gand, Iveryana, Mars, Queen Victoria, Stella, Vesuvius, Wilhelm Lester, and President Claeys; Camellias Alba plena, Benneyi, Comte de Flandre, Conspicua, Fimbriata, La Pace, Leeana superba (Bealii), Valtevaredo, Storyi, Rafia, Mrs. Cope, and Monarch. Besides these you will, of course, grow Primulas and Cinerarias, bulbs, Dielytra spectabilis, Spiræa japonica, and Deutzia gracilis. Pelargoniums to flower in winter require to be kept stopped until August, and should be potted in September.

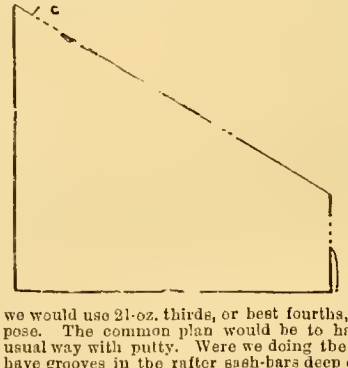
Cheilanthes elegans (*Idem*).—That is the name of the Fern of which you enclose a frond It does well in a greenhouse, and in a position partially shaded from bright sun. It requires a compost of two parts sandy peat, one part fibrous loam, and sandstone in pieces from the size of a pea to that of a hazel nut, and a like part of silver sand. Good drainage should be given, and when growing the watering should be liberal; in winter less is required, but even then the soil must be kept moist.

Pruning Evergreens (*E. H. B.*).—There is no book on the subject, nor is one needed, for all those you mention may be pruned with a knife, not shears, now or any time in spring, and may have their shoots removed to any extent you wish.

Preventing Green Fly (*Buty*).—We are not aware of any composition that may be applied to Roses and Pelargoniums as a preventive of this sphis. The best plan is to fumigate with tobacco whenever any of the insects are seen. Soapsuds are useful for syringing wall fruit trees and even out-door Roses, but they vary so much in strength that it is a question solely of experiment, and in that way only can we ascertain the strength to be employed. Sometimes soapsuds contain a large quantity of soda, at other times little or none. We use soapsuds for Asparagus, between rows of Cauliflowers, and for watering Celery, &c., and if employed for washing wall trees we dilute with double the volume of water. Good waterings and liberal treatment will keep off mildew.

Removing Old Paint (*Hortulanus*).—The most effectual application is naptha. The oldest and hardest paint is dissolved by it, and may be then wiped off.

Glass Against Fruit Walls (*B. S.*).—This will always be an advantage. If sashes are laid against the trees it will help them both when in bloom, and also if it is desirable to ripen them earlier, removing them during the summer. If left, an open space should be preserved at top and bottom for air. We are no advisers for having anything like a fixed roof a foot or so from the wall, for if so the sashes must move or slide, or how are you to get at the trees, to wash, water, clean, prune, &c.? Sashes are only economical when they are there and to spare. A fixed roof is the cheapest in every way. For your wall we would have a hipped roof of a foot, and in that have the ventilators, and then some glass resting on a rail and posts in front, at least 4 feet from the wall, with a ventilator between the wall and ground. A more simple house and a more useful one would be to make the glass into a lean-to thus, as you would have so much more room inside, and such an orchard house could be put up more cheaply than making sashes to lay against the wall. We would have a narrow house for the 8-feet wall, and a wider one for the wall 15 feet in height. A great advantage will be gained by just having enough of room to walk and work inside. Without that we would not use glass except as moveable sashes. As stated above, except for temporary purposes, we have no faith in the glass merely a foot from the wall. For permanent work we would use 21-oz. thirds, or best fourths, as good enough for the purpose. The common plan would be to have rabbets and glaze in the usual way with putty. Were we doing the work for ourselves we would have grooves in the rafter sash-bars deep enough to give the glass play, dispense with putty, and fix the glass firmly by a packing of cord or list beneath.



Greenhouse Construction (*Arundo*).—It is very desirable that all the front lights should open, as it is not possible to give too much air to a greenhouse in summer. The difference in expense between fixed lights and those made to open is not great, and economy of this kind is, as you say, expensive in the end. It is by far the best plan to have the top lights hinged, and raised or lowered by an iron rod and crank, for by it you can give air even in rainy weather, but by the cord, pulley, and weight principle the lights must remain shut in wet weather, or allow wet to fall upon the plants. The end ventilation is of no consequence. You will have sufficient without any at the west end, and the door only need be opened in very bright hot weather, and not then if very windy.

Vine Leaves' Edges Brown (*B. G.*).—We have traced in many instances this injury to one of two causes, or to the two causes combined—deficient supply of sap, so deficient as not to sustain the luxuriant growth of the leaves, and absence of free ventilation, so that the moisture which collects on the edges of the leaves is not dried-off before bright sunshine

visits them. We think in your case the cause is chiefly defect of sap, as the leaves are vigorous and the roots outside. More warmth in the soil would in such case have been a preventive.

Vines Breaking Irregularly (*A. B.*).—Tie back the canes, bringing the upper part below the base, and keep them in that position until the lower part is well broken, and then tie them up to the rafters.

Heating Vine Border (*C. P.*).—It would not be of any great benefit to put heating material on the border now, for it would afford no greater warmth than the sun's rays, and to cover the border now will only be to shut them out. Had such a covering been put on three months sooner it would have been of great advantage, heating the border at a time when it was cold, and causing more root action in consequence. The removal of stones from gardens and shrubberies is not beneficial, only it gives the soil a neater appearance. The soil being light and porous with a gravelly bottom the removal of the stones will do harm, inasmuch as it diminishes the staple. For neatness and facility of working, their removal, however, becomes necessary, adding their equivalent in manure or compost.

Spots on Vine Leaves (*G. S.*).—We have never seen a case precisely similar. There is no fungus on the spots, which evidently arose when the leaves were quite young. Either the roots must be in a very bad condition, or there must have been some defect in overheating at night, and consequent withering by radiation.

Vine Leaves Warted (*A Constant Reader*) —The leaf sent shews warts, the consequence of a close, confined atmosphere. The holes we attribute to weevils, and for these your best remedy is to search at night with a candle or lantern, shake the Vine briskly on a white cloth, and catch what falls. About 9 P.M. would be a good time.

Vines and Vine Borders (*R S.*).—We are glad that the borders made inside the greenhouse have answered so well, chiefly, we believe, owing to the good drainage and the free admixture of lime rubbish with the common garden soil. We would have preferred a lot of bruised and broken bones to so much rotten dung, as they are more lasting, and there is no danger of their running into an unctuous mass. Your experience is valuable as showing that good old garden soil will grow good Grapes. We have often seen fine Grapes grown in the same [illegible] as that which suits Cabbages and Turnips, though in making a new border we would prefer friable mellow loam from sods if we could obtain it Having done so well inside, we should have been tempted to adopt a similar plan outside. We think that, where the position will admit of it, it is an error to make a huge deep hole of some 5 feet in depth for a Vine border. We would rather have a good position above the surrounding ground level. Where the ground cannot be raised, a moderate depth must be obtained by going down, guarding against stagnant water by free drainage The brickbats and lime rubbish to the depth of 2 feet were quite proper; less would have done if placed open, but instead of placing 5 cwt. of bones on the top of this rubbish, we would have mixed them with the bulk of the soil; and instead of mixing so much rotten dung with the soil, we would have used less, and then given a surface mulching. The tendrilling of the bunches leads to one of two conclusions—either the roots are getting too deep, or the wood has been imperfectly ripened, the latter being often a result of the former Still, as the Vines are so healthy, we would not lift them before giving them a trial of a year or two more; but to encourage the roots nearer the surface we would mulch in summer, water if necessary, and cover the border with dry litter early in autumn, say in the middle of October. We would also keep the border drier in autumn, and give more air and a little more fire heat before the leaves turned yellow.

Vine Leaves Scorched (*G. M.*).—If you can find out how the leaves and shoots are all scorched and burned up in your house, and not a leaf or shoot in a house 50 yards distant affected, then you will know all about it better than we can tell you. The leaves sent were withered. If they belong to Lady Downe's, or a me similar woolly variety, then there is nothing but the scorching, otherwise we should fear you had mildew. If so it would be a consequence of a confined moist atmosphere, otherwise we have not a doubt that your foliage and young shoots are scorched and burned. The Vines would be safer at 16 rather than 10 inches from the glass; but the chief cause of the burning we consider is found in your own statement, "the house was closed except a few hours in the day." We agree with you that frost has had no influence in the matter. We do not think that bud or spotted glass has much to do with it, as then the scorching would have been more partial than general. We believe your remedy will be found in early air-giving, and if that is inconvenient, leave a little air on all night; half an inch along the apex will prevent confined vapour. Better give an inch, and use a little artificial heat to counteract the air-giving.

Vine Leaves and Stems Burned Brown (*Wyeside*).—From what cause we cannot say, but some downy leaves, like those of Lady Downe's Vine, are more apt to blister and turn brown than Black Hamburgh; and Vines coming into bearing late are more apt to suffer than earlier ones, chiefly, in our opinion, because less care is bestowed on early and careful ventilation. Nothing is more certain than this, that even from the thickness, a leaf of Lady Downe's will burn when a leaf of Black Hamburgh and a leaf of Muscat would suffer nothing. We are not surprised that your Apricots suffered from dryness. We are sorry to say that Apricots and Peaches, after thriving well in many places, are now suffering from what the frosts left behind them; many shoots are shrivelling up that seemed fresh.

Exudation on Grapes (*An Old Subscriber*).—We cannot be quite certain from your description, but we fear "the pimply, sticky, dew-like matter" on your bunches of Grapes now colouring comes from the mealy bug. You can soon satisfy yourself, for the bug itself, with its cottony covering, will be easily seen. If that is the case you can hardly have anything worse. All you can do now is to mitigate the evil, and that by using a small brush, dry, to get rid of as much as possible of it, and having several brushes, cleaning one as it becomes dirty, and drying it previous to use. No kind of smoking, nor anything we have tried, will injure the mealy bug. Any liquid you might use now, such as Pooley's or Veitch's, would injure the appearance of the Grapes. If it is the mealy bug it is in no way attributable to anything wrong in the cultivation or general management; in fact, the condition of your Grapes and Vines proves that. At present you can only mitigate the evil. When the Grapes are cut and the wood ripe we would advise washing everything with hot soft-soap water, and not a cranny of wood, wall, stage, or shelf must be missed. The Vines should be painted with clay, soft soap, and sulphur. As to how such an insect comes, that is often seemingly mysterious. A single plant brought with an insect upon it would be quite sufficient to fill a place. One or two on the coat of a visiting gardener might make a beginning.

Strawberries Bloomless (——).—As your Strawberry pots in a Cucumber house have not shewn a blossom, we have little faith in the same plants doing good service for forcing next year, or fruiting at any time; therefore we would throw them away and have fresh plants for next season, taking runners from bearing plants. A Cucumber house would do in an emergency for swelling and ripening Strawberries, but the temperature necessary is too high to start and grow them in.

Moss on Wood Path (*C. J. E.*).—It is not a Moss, but Sagina procumbens, Pearlwort. As the wood path is on a moist soil, the way to encourage the plant as you desire will be to manage to keep it moist throughout the summer.

Tacsonias (*A. M. G.*).—The Tacsonias do very well in large pots or tubs, and if well watered and mulched will bloom more freely than when planted out. Of course they will drop their buds if the roots are dry. You may plant them outside, and bring the stems into the house like Vines, and they will do very well if the stems be protected from frost, and the roots as well, by a covering of litter or moss.

Flower-garden Plan (*W. S.*).—We very much admire your flower-garden plan, owing to its simplicity and roominess. Your No. 1 central clump could not be improved, planted with Coleus, with curved ovals of Polemonium cæruleum round it. 2, 3, 4, 5 will be very nice, and so will 6 and 7 be. As you hint, we would arrange 8, 9; and as you have the plants, we would centre the purple Verbena with Christine, and edge with dwarf Calceolaria, yellow. 10 and 11, and 12 and 13, are cross beds. Keeping that in view and the plants you have in stock, we would surround 10 and 11 with Golden Chain, and 12 and 13 with Iresine Lindenii.

Prepared Calico for Strawberry and Melon Frames (*H. R. D.*). —The great inducement for using glazed and waterproofed calico, such as you refer to, was owing to the dearness of the glass. When the duty was removed calico was less in demand. Even now for many protecting purposes nothing is better than calico, even in its natural state. If firmly stretched it excludes moisture like an umbrella. The forwarding of Strawberry plants taken up with balls from the open ground, and covered with calico prepared as stated, so as to gain two or three weeks in gathering, will depend entirely on what the sun does for you, and on your lifting the plants. You say the first week in March. We have been very successful from lifting in April and on the first days of May, and covering with glass, by giving a little extra heat below the soil; but we should not advise you to do this at the beginning of March, as we fear you would thus give an impetus to growth instead of flowers and fruit. If you gave no such help, why not leave your plants where they are, and keep them covered except in bright days, when the sun could have all the power? We presume, however, that you wish to move the plants to a better position. We see that your frames are sound and good, so we suppose that your calico is fixed to frames that you can use much as glass sashes. In answering inquiries we do not like to go beyond our experience or direct observation. We have covered a sloping border with sashes in the beginning of May, merely laying the sashes on pots and placing a board back and front, and we have had fine gatherings fourteen and sixteen days earlier than from those exposed. We have done the same, and in dull weather we have gathered from five to seven days earlier. Twice or thrice with the same convenience as to back and front, in the way of boards, we have stretched a roll of clean unbleached calico along quite tight; the calico, however, rendered bright from previous use, and in one case we gained eight days, and in several cases three or four days. The forwarding in such cases depends much on the weather. We should think that in moderately sunny weather you would gain more than a fortnight, but, then, we have not proved it. As for Melons we would advise planting out in the middle of June instead of the middle of May, when they were to be covered with such prepared calico. But here we have had no personal experience, only we have proved over and over again that but little extra heat is needed for the hardiest Melons after the middle of June.

Peach Leaves Holed and Blistered (*W. B.*).—As far as we recollect the leaves sent before had traces of scalding, some of these leaves have the same; 8.30 A.M. is not soon enough to give air, if the house catches the morning sun. Under such circumstances we would give air fully one hour and a half earlier, or most likely leave half an inch along the top all night. There is much misconception as to air-giving. We have no faith in breezes and strong currents of air in houses. It is amazing how little air will do if it is given early, and the temperature rises and falls gradually with sun heat, a different thing from fire heat however applied. It is hot, confined air loaded with vapour that causes the scalding or blotching. There are different appearances in the Peach leaves. Those thin and whitish in appearance have chiefly the marks of decrepitude from age and want of nourishment. Those thin and small, from trees planted last autumn, are nothing much out of the way. We think that next season they will be all right, with early air-giving, &c Those leaves with holes in them and blotches we are rather doubtful of. The blotch we consider a decided case of scalding. The holes in the leaf, if they had been empty, we would at once have considered as a proof that there was fungus affecting the roots. The best remedy is placing fresh soil about the roots, and using flowers of sulphur, moderately of course. We know no one who has made such researches in this direction as Mr. McKay, gardener at Woburn Abbey, and this is the remedy he applied. We instanced the other week a most successful combination of a flower bed, for which we are indebted to Mr. McKay, jun. So far as we understand or know, we are indebted to Mr. McKay, sen., for tracing the connection between the holes in Peach leaves, as if they had been riddled with small shot, to an attack of mildew on the roots, one additional reason for not using leaf mould or dung so fresh as to contain spawn of various fungi, We might have at once come to the conclusion that these holed leaves were the effects of fungi at the roots, but that many of the holes were not open, but had burnt brown patches not fallen out, of from one-eighth, to one-quarter, or one-half of an inch in diameter. That and the appearance round them led us to imagine a slight scalding from warm confined vapour, and a burning from some nodes or scratches in the glass, acting as foci or burning glasses. Then the crowding of so many trees in one house may be some disadvantage to you. The remedies we propose, then, are early air-giving as above, fresh soil if it can be given, and

if not practicable now, forking the soil so as not to injure the roots, a scattering of flowers of sulphur, a good watering with manure water, and daubing up every scratch and knot in the glass with paint or putty.

Cucumber Leaves Blistered (*Chesham*).—The leaf you enclosed to us is blistered by the sun's rays falling on it whilst wet with the condensed moisture of the previous night; or it may be from keeping the plants close for some days, as in dull and moist weather, and then the weather becoming bright and warm the sun's rays dry up the moisture too quickly, and the leaves are scalded or scorched. It is well for some days to shade for a few hours in the hottest part of the day in bright weather succeeding a period of dull weather. That and early air-giving will remedy the blistering of the leaves. It is not unlike the disease.

Grafting Aucubas (*An Old Subscriber*).—The best time to graft is at the beginning of February, using one-year-old wood, and that of the stock may be of any age, but it is well if the wood of the stock is about equal in thickness with that of the scion. We have no experience of budding Aucubas, but have no doubt of its succeeding. Try it in July, not removing the wood. Grafting is best done under glass, and in that case it may be performed as early in summer as the wood is firm—August or September, and from that up to March.

Lilies of the Valley (*M. C.*).—The indifferent flowering of these is due, we think, to the heat and drought of last summer combined with the sunny aspect. Transplant them next November in good, rich, light soil, where they will be shaded from the direct midday sun. An east border answers well. The double Violets plant out in a good rich soil on a north border, watering well in dry weather, and taking up at the close of September; then pot them, place them in a cold frame, and in October remove the large leaves, in fact all that are old, and place in a light airy position in the greenhouse. In taking up preserve a good ball, removing only the loose soil, and place in pots sufficiently large to hold the roots without cramping.

Green Aphis on Roses (*H. E. M.*).—Quassia and soft soap will no doubt destroy aphis. The wash is made by boiling 4 ozs. quassia chips in a gallon of water for half an hour; let the liquid stand until cool, then strain, add 6 ozs. of soft soap, and then enough water to make three gallons. With this the bushes may be syringed overhead in the evening. We consider tobacco water the best remedy. It may be had of most tobacco manufacturers, and should be diluted with six times its quantity of water; or it may be made by pouring a gallon of boiling water on 4 ozs. of the strongest tobacco, covering up, allowing the liquid to stand until cool, and then straining. The shoots infested with aphis may be dipped in it, or the plants may be syringed with it.

Ants in Cucumber-bed (*Reigate*).—The best plan is to place a little honey in saucers for a few days, and after the ants flock to this mix with it an equal proportion of arsenic.

Names of Fruits (*Lachenalia*).—1, Scarlet Nonpareil; 2, Sturmer Pippin.

Names of Plants (*T. Walters*).—The yellow-flowered shrub is Berberis Aquifolium, Holly-leaved Berberry. The other specimens were mere dried leaves. (*X. Y. Z.*).—Cineraria maritima, Sea Ragwort.

POULTRY, BEE, AND PIGEON CHRONICLE.

REARING CHICKENS.

As "O. P. Q." refers to me to throw some light upon what I should call his prodigious losses, and as his feeding tallies almost entirely with mine, I can see no other reason for it except possibly breeding in-and-in. The other day I met a noted breeder of Game, one of many years' standing, who bred Game years ago for the pit, but who now breeds for exhibition. His first words were, "Well, how are your chickens?" My answer was, "Few, but very strong and healthy." He replied, "I wish mine were the same. I think I do well if I rear one-half of those hatched." At this remark I smiled. He then said, "If you bred Game to win with, you would do the same. Formerly (twenty years ago) when I bred for the pit I hardly lost a chicken, now I lose scores." I asked him to explain this; he said it was breeding in-and-in, without which, he asserted, Game could not be bred to the standard required for exhibition. May not this be the case in "O. P. Q.'s" yard?

Change of breeding ground is, no doubt, desirable, but for the last twelve years I have always bred on the same spot. I have about two acres of grass run, and my fowls are never off it. Then, again, his soil is the same as the soil of my run—gravelly; but I can attach little importance to this, for Admiral Hornby's birds are reared on a very stiff clay.

Does "O. P. Q." feed early and late? This is very important at the present time of the year. My hour for the last feed is ten o'clock at night, and for the first six o'clock in the morning; the birds are fed as often as they will eat, and nothing is ever left after their meal. All these things have been over and over again recommended in this Journal, but I am afraid they are not generally acted upon, and my experience leads me to say that no one can win with chickens of the large breeds without strict attention to such rules.

Another thing occurs to me. Are the hens he breeds from those which have been over-fattened or got up for exhibition, or those that have been frequently exhibited? Chickens from such hens are generally very weakly. I do not think amongst my breeding hens there is one weighing over 7 lbs., although I could easily make some of them between 9 lbs. and 10 lbs. I like my breeding stock to be kept in running condition, and always rather underfed than overfed. I find Dorking chickens most easy to rear, but in cold weather I never have more than seven chickens to a hen; in fact, I rarely allow them to have more. I use no artificial foods, nor do I put anything in the water. My idea is that the nearer you approach nature the better, and therefore I strongly object to using medicines, unless the fowls show symptoms of disease, and till then I never give tonics or medicines of any kind. On one occasion, some years ago, our family doctor, then an old man, came into my yard, and at the time I was giving the chickens sulphate of iron in their water. He asked the reason; having told him, he said, "Your birds look very healthy, what is the matter with them?" I told him "Nothing." He at once said, "Then stop giving them that stuff. When a person is well the less physic he gets the better; and why are you giving physic to your chickens in perfect health?" Since then I have never used anything but the best food, and I find that is all the artificial food they require.

I do not set up my system of rearing as perfection, but merely state my experience. With me it has given perfect satisfaction. I have finished hatching for the season, and have as yet lost but one chicken.—T. E. Kell.

I cannot be called a lucky fellow, and I never won a silver cup with poultry in my life (but if I did, I think I should put it in the dining and not the drawing-room), and I do not intend to try; but I hardly ever lose a chicken, and if my experience is of any use to your correspondent, here it is for him. I feed for three weeks on custard (an egg broken into a teacupful of boiling milk and stirred until it becomes quite thick), groats, and any odd scrape, as potatoes, meat chopped fine, &c.; after that time, groats, wheat, &c. In their water I put a little of Day's game paste. I shut them up with the hen in the coop at night, and never let them out until nine o'clock or so in the morning. I move the coop every day a foot or two to a fresh place. I have not lost a single chicken or Duck this year, except one whole hatch through rats.—H A.

STROUD SHOW—DATE OF FIXTURE AND CLOSING OF ENTRIES.

It is to be regretted when two important fixtures like Stroud and the Bath and West of England clash, but the alteration of the date of fixture is not such an easy matter as some may suppose. It is a simple matter for an exhibitor to elect which of two shows he will patronise, and it is natural he should wish to patronise both; but, however much those interested in either show may desire his support, or however much they may wish things could be so arranged as to admit of both being patronised, it cannot this year be done; and as it is simply impossible to turn round or back out, the carriages must endeavour to pass. The entries for Stroud close on Saturday the 13th inst., and exhibitors of Canaries and British and foreign birds will please notice this, as the date of closing entries is somewhat earlier than is usual.—Stroud.

I am sure all exhibitors of Rabbits will be glad to find such an invitation given as that set forth in the Stroud schedule. I feel that the Exhibition will prove so satisfactory as to become annual, which I hear is the intention of its promoters if this, their first attempt, prove encouraging. Classes are numerous—five are given to the "Lops," so their patrons cannot complain, and four classes more are offered to the other portion of the Rabbit family, and in these four will undoubtedly be found all with long and short hair, and the tiny Dutch contrasting with the fine Belgian Hare, or probably the even still larger Patagonian, so forming a complete assemblage of the varieties. The prizes I think fairly proportionate with the entry fee, and in addition there is a silver cup, value three guineas, for the most points in each class. An extra fee is required from competitors for the cup, yet many will doubtless pay it, for the chance of a so-much-to-be-desired evidence of success. I have a feeling that exhibitors generally are anxious for silver or gold in this form. The arrangements are wished to be complete in every way to insure the safety and convenience of the Rabbits, and all is promised to be done that can be, to insure all exhibitors of this year being also found as such in the future. The Judge having only one section of the Show, will have time sufficient for making careful awards.—Charles Rayson, *Ivy Lodge, Didsbury.*

EPWORTH POULTRY SHOW.

The sixth annual Show took place on the 5th inst., and, considering that the town is six miles from the nearest railway station, the Exhibition was excellent, there being 553 entries—106 in excess of last year. The Committee worked with a hearty goodwill, and the birds were well attended to, and all dispatched to their various destinations on the evening of the same day.

In *Spanish*, the first-prize birds were very good, but of the rest only

the second-prize pen deserved notice. Of *Dorkings* there were but two pens of moderate quality. The class for Red *Game* was good; the first-prize and cup went to a splendid pen of Black Red, and the second to good coloured Brown Reds, which, in the opinion of some, might have given way to a pen of Black Reds, the second-prize cock, although of a capital colour, being rather narrow in body and shoulders. In the Duckwing class the first prize was awarded to a very fine-coloured pair, the second-prize pen losing only in the colour of the cockerel, which is very dark on the saddle. The *Brahmas*, with the exception of one pen of Dark birds, were very poor. *Cochins* were better. The first prize went to Buffs, and the second to Partridge-coloured; the cock in Mr. Watts's highly-commended pen was almost white on the tail. Unfortunately the Committee have not seen their way to the redistribution of the *Hamburghs*, which are shown in two classes only, but the birds were as good as could be desired, Silvers winning both prizes in the Spangled class, and Golden-pencilled being first and Silver-pencilled second in the Pencilled. The cup for the best pen except Game was awarded to the Golden birds in this class; the cock was the most perfect we have yet seen in a show pen. In Black-breasted and other Red Game *Bantams* the prizes were taken with the greatest ease, although the class was good. In the next class very good Piles were first, with a nice pen of Duckwings second, but the best Duckwing cock shown was badly supported with a hen. A pen of very good Black Bantams was first in the Black and White class, the second being Whites such as are rarely seen. In the Variety class of Bantams, Pekins were first and very good Silver Sebrights second. In the Variety class were but three entries, Crève-Cœurs winning both prizes.

The single *Game cock* prizes were awarded to a Duckwing and a Brown Red respectively, though we confess a leaning towards the latter, the former having a deformed claw, although doubtless from an accident. The first prize for a single cock of any other variety went to a Golden Poland, and the second to a Buff Cochin. In the class for single hens were some good birds, the first-prize bird being a Spanish and the second a Silver Poland. With the exception of the winners, the Rouen *Ducks* were very poor, and the Aylesbury Ducks were bad. In the Variety class for Ducks were many entries, but some of the birds were out of feather, though the first-prize Bahamas and second-prize Mandarins were exceedingly handsome. The first prize in the Selling class went to Spanish, and the second to Buff Cochins.

There was an unpleasant misunderstanding with one of the exhibitors of *Pigeons*, who brought his birds on the morning of the Show, but in accordance with the rule in the schedule, and in justice to other exhibitors, they were not allowed to compete, and in consequence several of the pens were empty.

In the Carrier class Mr. Yardley won with two good pairs of Dun and Black respectively, a pen of Blacks being highly commended. The first-prize Pouters were Blue-pied, correct in all points, and the cup for the best pen in the Show was awarded to them. In Almond Tumblers the competition was keen, the second-prize pair only losing in the head of the hen, which was not as good in the stop. The two winning pairs of Jacobins were Reds of great merit, but no others were worthy of position. The Fantails were very good, the second-prize pair being Squeakers. In the Variety class a handsome pair of Nuns shown by Mr. Watts, of Birmingham, were disqualified, the bottom of the marking on the throat and the base of the crest being trimmed to a degree in both birds.

The *Cage Birds* were shown in a shed at the other end of the field, and were quite comfortably housed. The most noteworthy were the first-prize Buff Belgians and an evenly-marked Yorkshire Canary. The Goldfinches were not nearly so good as last year, although there were many entries. There were also plenty of Linnets, the first-prize bird being perfect, and perhaps the most perfect bird of that variety we ever saw in captivity. This bird seems to be fed entirely upon linseed, which may have something to do with his appearance. In the Variety class the first prize was taken by a handsome Grass Parakeet, the second by a Cinnamon Canary, and the third by a dark Goldfinch Mule.

Among the Lop-eared *Rabbits*, Mr. Gravil won both prizes for bucks, the first with a promising young Blue and White buck, and the second with a Yellow and White. The former, though very young, measured 21¼ inches in length of ear, and 4⅜ inches in width. In does, the first was a grand Grey Rabbit, well developed in all points, and very large, and the second Fawn and White, the former 21½, and the latter 21 inches in length. The Himalayan and Silver-Grey classes were well supported, and the specimens good.

SPANISH.—1, T. C. & E. Newbitt, Epworth. 2, J. Thresh, Bradford.
DORKINGS.—1, R. W. Richardson, Meaux Abbey, Beverley. 2, W. H. Robson, North Reston.
GAME. *Black-breasted and other Reds.*—1 and Cup, C. Chaloner, Whitwell, Chesterfield. 2, J. Hodgson. *hc*, C. Chaloner; J. C. Coupe, Doncaster. *Duckwings, and any other variety.*—1, F. Sayles & R. Bentley, Crowle. 2, S. Matthew, Stowmarket. *hc*, C. Chaloner. *Any Variety.—Cock.*—1, C. Chaloner. 2, E. Aykroyd, Eccleshill, Leeds.
BRAHMAS (Light or Dark).—1, H. Beldon, Goitstock. 2, J. Watts, King's Heath, Birmingham. *hc*, W. Whiteley, Sheffield. *c*, Dr. Holmes, Whitecotes, Chesterfield.
COCHINS.—1, W. A. Burnell, Southwell, Notts. 2, J. White, Whiteley, Netherton. *hc*, J. Watts. *c*, W. Topham, Sheffield.
HAMBURGHS.—*Gold or silver-spangled.*—1, H. Beldon. 2, Ashton & Booth, Mottram. *hc*, R. D. Borne, Boston; S. & R. Ashton, Mottram; G. Holmes, Driffield. *Gold or Silver-pencilled.*—1 and 2, H. Beldon. *hc*, G. Holmes.
GAME BANTAMS.—*Black-breasted and other Reds.*—1 and 2, T. C. & E. Newbitt. *hc*, F. Sayles & R. Bentley; J. R. Robinson, Sunderland; T. Palthorpe, Carlton, Pontefract. *Any other Variety.*—1, T. C. & E. Newbitt. 2, S. Hudson, Hull (Duckwing). *hc*, C. Chaloner; T. C. & E. Newbitt. *c*, Bellingham and Gill, Burnley; G. S. R. Cayless, Grantham.
BANTAMS.—*Black or White.*—1, S. & R. Ashton (Black). 2, H. Beldon (White). *hc*, Mrs. J. M. Procter, Hull (Black); S. & R. Ashton; Hudson & Burnip, Epworth (Black). *Any other Variety.*—1, H. Beldon. 2, J. Watts (Schright). *hc*, W. Harvey, Sheffield (Silver-lace).
ANY OTHER VARIETY.—1, H. Beldon (Crève-Cœurs). 2, Mrs. J. Cross, Appleby Vicarage, Brigg (Crève-Cœurs). *Cock.*—1, W. Harvey. 2, W. A. Burnell. *hc*, Mrs. J. Cross; H. Beldon. *Hen.*—1, J. Thresh. 2, H. Beldon. *vhc*, J. Powell, Bradford. *hc*, S. & R. Ashton; H. Beldon; J. J. Malden; W. Harvey.
DUCKS.—*Rouen.*—1 and 2, J. White. *Aylesbury.*—1, J. Williams, Wath-on-Dearne. 2, Mrs. Z. Maw, Epworth. *Any other Variety.*—1, W. Binns, Pudsey. 2, R. W. Richardson (Mandarin).
SELLING CLASS.—1, J. Powell. 2, R. Dawson, Beverley (Buff Cochins).

PIGEONS.

CARRIERS.—1 and 2, H. Yardley, Birmingham. *hc*, W. Campey, Beverley.
POUTERS.—1 and Cup, W. Harvey. 2, R. P. Moon, Driffield. *hc*, H. Yardley; R. P. Moon.
TUMBLERS.—*Almond.*—1, W. Harvey. 2, J. Ford, Monkwell St., London. *hc*, H. Yardley; J. Ford. *Any other Variety.*—1, J. Ford.
JACOBINS.—1 and 2, T. C. & E. Newbitt.
FANTAILS.—1, H. Yardley. 2, J. F. Loversidge, Newark.
TURBITS.—1, Hudson & Burnip. 2, H. Lawson. *hc*, A. A. Vander-Meersch, Tooting.
TRUMPETERS.—1, W. Harvey.
BARBS.—1, W. Harvey. 2, H. Yardley. *hc*, H. Cawood, Thorne.
ANTWERPS.—1, W. Harvey. 2, J. W. Collinson, Halifax. *hc*, T. C. & E. Newbitt.
ANY OTHER VARIETY.—1, W. Harvey. 2, H. Yardley. 3, R. W. Richardson (Owls). *hc*, J. Watts (Norwegians); Mrs. J. Cross; M. Ord, Ferry Hill (Sultans); C. W. Lawson, Pimlico (Swallows and Magpies). *Disqualified*, Mr. James Watts (Nuns).
SELLING CLASS.—1 and 2, J. E. Crofts (Magpies and Owls). *hc*, H. Yardley; W. Harvey.

CAGE BIRDS.

CANARIES.—*Yellow.*—1, J. Ross, Sheffield. 2, H. N. Fosbrooke, Hatfield, Doncaster. *Buff.*—1, J. Rose. 2, E. A. Isle, Epworth. *Green or Variegated.*—1, J. J. S. Clarke, Hatfield, Doncaster. 2, H. N. Fosbrooke. *hc*, J. J. S. Clarke; T. J. Tomkinson. *Gold or Silver-spangled Lizard.*—1, A. Lewis, Hull. 2, J. Ross. *hc*, J. J. S. Clarke.
GOLDFINCH.—1, C. Gunnie, Hatfield, Doncaster. 2, H. N. Fosbrooke. *hc*, R. Gravil; J. Richardson. *c*, C. Slight; G. Yates & J. Lambert; R. Bramhill, Epworth; G. Fawcett.
LINNET.—1, Miss R. H. Beckett. 2, G. Yates & J. Lambert, Thorne. *hc*, B. Beckett, Epworth; W. Balmforth, Epworth; T. Kirk, Epworth. *c*, Miss A. Marshall, Epworth.
ANY OTHER VARIETY.—1, Miss Allen, Epworth. 2, C. Gunnie (Cinnamon). 3, G. Lindley, Epworth. *c*, E. Cutts, Thorne (Goldfinch Mule); Miss Clark (Waved Parrot).

RABBITS.

LOP-EARED.—*Buck.*—1 and 2, C. Gravil, jun., Thorne. *hc*, P. Ashton, Drypool, Hull. *Doe.*—1 and *hc*, C. Gravil, jun. 2, J. J. S. Clarke.
HIMALAYAN.—1, Dr. Horsfall, Pontefract. 2, J. Boyle, jun., Blackburn. *hc*, J. Butterworth, Lower Side, Rochdale (2). *c*, S. G. Hudson (2).
SILVER-GREY.—1, R. H. Glew, St. John's, Wakefield. 2, S. G. Hudson. *hc*, J. Boyle, jun.; C. Gravil, jun. *c*, A. Chapman, Crowle (2); S. G. Hudson; Dr. Horsfall.

JUDGES:—*Poultry* and *Pigeons:* Mr. E. Hutton and Mr. J. Douglas. *Cage Birds:* Mr. E. Hutton. *Rabbits:* Mr. E. Hutton and Mr. J. Spinks.

BEE-KEEPING FOR COTTAGERS.

HAVING laboured hard amongst cottagers for more than thirty years in order to promote a proper and profitable system of bee culture, I have read the article of "W. J., *Shepherdswell*," with much interest, but in the last paragraph but one I was much surprised to find "brimstone torches" recommended. Now, I must confess my astonishment at this in these days of improvement in bee culture.

Having worked hard nearly all my life to preserve the bees, I am inclined to think that "W. J." has "advanced one step backwards;" and I was the more surprised at this in consequence of my being aware that Mr. Pettitt, of Dover (within twenty minutes of Shepherdswell by rail), makes it his practice in the autumn to pay personal visits to cottagers for the purpose of taking their bees, leaving them all the honey which he cuts out of the hive, without having recourse to brimstone torches or any other kind of fumigation; and, further, Mr. Pettitt performed his operations upon some twenty stocks in villages adjoining Shepherdswell last autumn, and took the bees from that station per rail to Dover. The cottagers upon whose bees Mr. Pettitt operated were so fully satisfied with the results that they one and all prefer the abandonment of the brimstone pit, and I can only express my surprise that "brimstone torches" should be recommended from—SHEPHERDSWELL.

THE MANNERS AND CUSTOMS OF BEES.

MR. A. R. WALLACE, reviewing in *Nature* a new book upon bees, observes—An interesting experiment is detailed, proving that the business of a hive may go on a long time with perfect regularity without the presence of a queen. On the 13th of June a swarm was put into a mirror hive. On the 1st of July, while the queen was laying drone eggs, she was taken away, yet the bees showed no agitation, but continued their work as usual. They formed several royal cells, and examined them continually to see if eggs had been deposited in them. All through the summer work went on as usual, honey being plentifully stored; but no attempt was made to raise a queen by artificial food, nor were the drones massacred. By the middle

of November all the drones had died, and the working bees then began to diminish, and by the 31st of December they had also died. As all the workers had been born before the 25th of July, this gives about six months, or not much less, for the duration of their lives. The fortifications and barricades of the bees against the incursions of the Death's-head moth are said to be due to reason rather than to instinct, because it has been observed that they do not commence these fortifications on a first attack of the Sphinx, nor until they have been robbed of nearly their whole stock of honey. "This is a case in which the insect is taught by experience, and which admits, in all its particulars, of a direct comparison with human reason and contrivance. A colony that had been thus attacked one year, and was tardy in its defensive operations, having derived instruction from the past, constructed fresh ramparts speedily on the re-appearance of the Sphinx three years afterwards, and thus guarded itself from an impending danger. Since the lives of the working bees do not extend beyond six or seven months, it is evident that the information of the colony above referred to must have been traditional, or else derived from a queen which had reigned over them three years previously." This "tradition" through some six or seven generations seems highly improbable, and that the knowledge of how to act was derived from a queen not less so. Do not the facts rather indicate that bees differ considerably in intellectual capacity, and that some hives contain directing bees more capable of acting promptly on the defensive than others?

EARLY SWARMS.—May 5th I hived a very large swarm of bees, and I am told it is unusually early. It is said to be one of the largest of swarms. It came from an early swarm of last year, and out of the old-fashioned straw hive.—THOMAS RECORD, *Hatfield House, Herts.*

MR POINTING, brewer, at this place, had a fine swarm on May 5th, and on the 7th my employer had also a very fine swarm.—G. L. DRUMMOND, *Neston, Bath.*

OUR LETTER BOX.

DUCKS' EGGS NOT HATCHING (*J. S. M.*).—You do not say whether the Ducks' eggs are put under a hen, or whether the Ducks sit themselves If they are put under hens, the cause of failure is that they are too dry The thing explains itself. In a state of nature the Duck leaves the nest to feed, and whether her food be on land or water, she enjoys a swim before she returns to the nest. Her breast is thoroughly wet, and in that state she sits on her eggs. Where the young fail to emerge from the shell, it is because the eggs have been kept too dry. Whether put under hens or Ducks, the eggs should be wetted every day when the expectant parent is off the nest. The water in which the eggs are put should be just warm enough to communicate warmth through the shells. These latter are never too thick, and they become thinner while the bird sits. It is the inner lining membrane that hardens from being kept too dry, and the birds lack strength to get through it. If a hen sits, wet the eggs daily; if a Duck, then allow her access to water when she is off, and she will do it herself.

COLOUR OF GOLDEN-SPANGLED HAMBURGH COCK (*M. R. F.*).—Have patience, and the birds will pair. The Golden-spangled Hamburgh cock should have rich chestnut plumage, the hackle and saddle clouded with black, the tail black, and the breast brown and black splashed. The deaf ear should be faultlesely white, and the comb well spiked, with a pike behind. It should not overhang the eyes or nostrils, and it should be firmly fixed on the head. Game fowls and Bantams may run together without fear of mixing.

BRAHMAS OUT OF CONDITION (*Subscriber*).—Your Brahmas are out of condition. You should have told us in what manner they are fed. Feed them on slacked ground oats morning and evening. Give them Indian corn at mid-day. Let them have some bread soaked in strong beer. If that do not answer, give them Baily's pills.

WHARFEDALE SHOW.—We are informed that Miss Beresford Peirse was awarded the second prize for Brahmas at the above-named Show. We did not receive the letter mentioned.

MARKING CHICKENS (*Oxoniensis*.—You can only adopt the system of marking by narrow strips of list if you wish to have a mark that is plainly and easily distinguishable. It is sometimes attended with damage to the feathering of the legs. To do the least possible hurt you must have the list wider on one side than the other, and let the wide side be on the inner part of the leg. If you choose bright colours they are easily distinguishable, as white, black, red, and blue. There is no other method of marking that is to be readily seen without catching the bird. When the birds can be caught, the wing feathers may be cut in each, denoting age by the order of the feather—1, 2, 3, and so on.

CHILLED EGGS (*E. D.*).—It is not at all remarkable that eggs sat upon for seven days only, and left by the hen for four hours, were not injured, but produced chickens. If they had been near to hatching, and had been chilled, this would probably have been fatal.

CAUTION.—A fortnight ago I advertised in your Journal a Golden Poland cock and ten hens for sale, at 10s. each A few days afterwards I received an application from 26, Downing Street, Everton, Liverpool, with the wish that the fowls might be as good as represented, and a promise to send a post-office order on receipt of fowls. I wrote to send cash before I sent the fowls. I received no answer, and I am informed that I had exercised a wise discretion, as there is no such name in the Liverpool Directory as the one given, and no such street.—G. W. BOOTHBY.

YOUNG TURKEYS (*A. L. B.*).—It is not true. They are crammed when it is wished to make them very large and fat.

DIARRHŒA IN FOWLS (*A. Z.*).—Feed on ground oats for your fowls. While the diarrhœa is very troublesome you may add some chalk, and mix the whole with cold water. Lettuce stalks and lettuces that are gone to seed are also good. We do not like wheat for food, nor Indian corn except as a change.

CARBOLATE OF LIME (*Constant Reader*).—It is a poison; do not put it into your Canary's nest. Keep everything clean—cage, perches, nest box, &c., and give free ventilation. Nothing else is necessary to check parasites.

LOSS OF BEES (*Mirator*).—Your bees may have perished from the effects of over-kindness, or rather from having been fed "not wisely but too well"—that is, in too open a manner. From the fact of their having carried in pollen freely, it would seem that they were healthy, and had a productive queen at their head during the early part of the present year. Your feeding may have been too openly carried on, and may have attracted first a few stray robbers, and then a general onslaught. Or they may really have died from starvation. Feeding twice a-week induces breeding; brood requires a considerable quantity of food. The bees may have had no available store during the cold weather to supply this need and to sustain the necessary amount of internal heat, and so may have succumbed. Examine the central part of the combs, and if you find the cells occupied by the dead bodies of the adult workers, you may be sure that they died of starvation or cold, or both combined.

METEOROLOGICAL OBSERVATIONS,

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude 111 feet.

DATE. 1871. May.	9 A.M. Barometer at 32° and Sea Level.	9 A.M. Hygrometer. Dry.	9 A.M. Hygrometer. Wet.	9 A.M. Direction of Wind.	9 A.M. Temp. of Soil at 1 ft.	IN THE DAY. Shade Temperature. Max.	IN THE DAY. Shade Temperature. Min.	IN THE DAY. Radiation Temperature. In sun.	IN THE DAY. Radiation Temperature. On grass	Rain.
	Inches	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
We. 3	29.948	56.8	49.2	S.	49.0	65.8	37 0	103.4	34.8	0.091
Th. 4	29.938	48.5	43.3	W.	49.2	57 7	37.9	117 0	34.7	—
Fri. 5	30.165	52.4	45.9	N.	48.5	66.8	36 1	112.4	34.2	—
Sat. 6	30.241	61.0	55 6	E.	50.9	72.8	48 8	121.0	45.8	—
Sun. 7	30.381	54 3	48.0	S.E.	52.3	63.0	42.0	106.6	41.2	—
Mo. 8	30,355	59.3	52.0	N.W.	52.3	74 8	37.8	116.4	37.8	0.364
Tu. 9	30.143	48.7	43.7	N.E.	53.4	51.1	43.3	105.1	41.8	0.020
Means	30.153	54.4	48.2		50.8	65.0	40 4	112.6	38.6	0 475

REMARKS.

3rd.—Fine morning, dull afternoon, rain between 6 and 7 P.M., very bright and fine afterwards.

4th.—Cold in early morning, fine day.

5th.—Almost a frost in morning, fine, clear, sunny day.

6th.—Much warmer, cloudy in afternoon, and rather oppressive, temperature rising above 70°, for the first time this year.

7th.—Warm, fine, and sunny.

8th.—Fine bright morning, very warm and oppressive in afternoon. At 3 22 P.M., thunder was heard from a cloud advancing from the N.; between 3.30 and 4.0 P.M., the storm was rather heavy, the darkness being considerable, and the thunder almost continuous. The total amount of rain was rather small for such a storm, but it fell with great rapidity, a quarter of an inch falling in eight minutes and eight seconds.

9th.—Showery in morning, fine afterwards.—G. J. SYMONS.

COVENT GARDEN MARKET.—MAY 10.

THE current rates have been maintained, and supplies generally are sufficient for the wants of the trade. Business is better, and as the London season is commencing we may hope for further improvement. A large quantity of old Potatoes, both Regents and Flukes, continue on hand, and heavy arrivals of new ones are reported. Continental imports comprise salading, Carrots, Turnips, and Asparagus.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....½ sieve	1	6	to 3	0	Malberries.....lb.	0	0	to 0	0
Apricots.....doz.	0	0	0	0	Nectarines.....doz.	15	0	30	0
Cherries.....lb.	0	0	0	0	Oranges.....per 100	6	0	10	0
Chestnuts.....bushel	0	0	0	0	Peaches.....doz.	15	0	36	0
Corrants.....½ sieve	0	0	0	0	Pears, kitchen.....doz.	0	0	0	0
Black.....do.	0	0	0	0	dessert.....doz.	0	0	0	0
Figs.....doz.	10	0	21	0	Pine Apples.....lb.	6	0	10	0
Filberts.....lb.	0	0	2	0	Plums.....½ sieve	0	0	0	0
Cobs.....lb.	2	0	2	6	Quinces.....doz.	0	0	0	0
Gooseberries.....quart	0	8	1	0	Raspberries.....lb.	0	0	0	0
Grapes, Hothouse....lb.	8	0	18	0	Strawberries.....oz.	0	6	1	0
Lemons.....per 100	6	0	10	0	Walnuts.....bushel	10	0	16	0
Melons.....each	6	0	12	0	ditto.....per 100	1	0	2	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....doz.	4	0	to 6	0	Leeks.....bunch	0	4	to 0	6
Asparagus.....per 100	4	0	8	0	Lettuce.....doz.	1	0	2	0
Beans, Kidney....per 100	2	0	3	0	Mushrooms.....pottle	1	0	2	6
Broad.....bushel	0	0	0	0	Mustard & Cress..punnet	0	2	0	0
Beet, Red.....doz.	2	0	3	0	Onions.....bushel	7	0	10	0
Broccoli.....bundle	0	9	1	6	pickling.....quart	0	0	0	0
Brussels Sprouts..½ sieve	0	0	0	0	Parsley.....sieve	3	0	6	0
Cabbage.....doz.	1	0	2	0	Parsnips.....doz.	0	9	1	0
Capsicums.....per 100	0	0	0	0	Peas.....quart	3	0	6	0
Carrots.....bunch	0	3	1	0	Potatoes.....bushel	2	0	4	0
Cauliflower.....doz.	3	0	8	0	Kidney.....do.	3	0	4	0
Celery.....bundle	1	6	2	0	Radishes..doz. bunches	0	6	1	0
Coleworts..doz. bunches	3	0	3	0	Rhubarb.....bundle	0	4	1	0
Cucumbers.....each	0	6	1	6	Savoys.....doz.	0	0	0	0
pickling.....doz.	0	0	0	0	Sea-kale.....basket	0	0	0	0
Endive.....doz.	2	0	0	0	Shallots.....lb.	0	6	0	9
Fennel.....bunch	0	3	0	0	Spinach.....bushel	2	6	4	0
Garlic.....lb.	0	0	0	0	Tomatoes.....doz.	0	0	0	0
Herbs.....bunch	0	3	0	0	Turnips.....bunch	0	9	1	6
Horseradish....bundle	3	0	6	0	Vegetable Marrows..doz.	0	0	0	0

WEEKLY CALENDAR.

Day of Month	Day of Week.	MAY 18—24, 1871.	Average Temperature near London.			Rain in 43 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.	Days.	m. s.	
18	Th	Ascension Day.	66 2	42.2	54.2	17	6 af 4	47 af 7	5 af 4	44 af 6	28	3 50	138
19	F		67.0	42 7	54 9	14	5 4	48 7	25 4	51 7	●	3 48	139
20	S	Crystal Palace Show.	66.9	43 4	55.2	20	4 4	49 7	51 4	56 8	1	3 45	140
21	Sun	1 Sunday after Ascension.	66 3	44.7	55.5	19	3 4	50 7	21 5	57 9	2	3 42	141
22	M	Anniversary Meeting of the Royal Geogra-	65.4	42.4	53.9	19	2 4	52 7	59 5	53 10	3	3 38	142
23	Tu	[phical Society, 8 30 P.M.	67.3	48.6	55.5	15	0 4	53 7	44 6	41 11	4	3 34	143
24	W	Queen Victoria Born, 1819. Anniversary [Meeting of Linnean Society, 3 P.M.	67.4	43.0	55.2	12	59 3	55 7	39 7	morn.	5	3 29	144

From observations taken near London during forty-three years, the average day temperature of the week is 66.6°, and its night temperature 43.1°. The greatest heat was 89°, on the 22nd, 1847; and the lowest cold 25°, on the 23rd and 24th, 1867. The greatest fall of rain was 0.76 inch.

OUR FIRST LANDSCAPE GARDENER.

HE was a painter, an architect, and the father of modern gardening. In the first character he was below mediocrity; in the second, he was a restorer of the science; in the last, an original, and the inventor of an art that realises painting and improves nature. Mahomet imagined an elysium, but Kent created many." So wrote Horace Walpole of William Kent, his contemporary, but we know full well that Walpole's judgment failed in controlling his love of superlatives, and we have from time to time inquired for and noted down other testimonies. We will now reduce these to a somewhat regular and connected order.

If, as we sometimes think, there are names that never could be ennobled, then such a name is *Cant*. Certain is it that in 1685 it was borne by a very humble family at Bridlington, in Yorkshire, in which year and place, and of which family the subject of our notes was born. We once knew a family who sought by adding an e final to form a little eddy of themselves in the flood of Smiths, but a bolder course was adopted by William Cant; he assumed that Cant was a contraction of Cantium, implying that his ancestors were of the Roman period, so he translated it and passed through life as William Kent

He was apprenticed to a coach painter at Hull, and though he soon showed superior abilities as a draughtsman, yet the colouring of his first tuition abided with him, and to the last was so offensive that though Sir Robert Walpole allowed him to employ his pencil on ceilings and staircase walls at Houghton, he only permitted him to draw and shade. The severest criticiser of his colouring was Hogarth, and we remembered this when we visited Kent's place of sepulture at Chiswick, for Hogarth is his near neighbour in death, resting in the adjoining churchyard, and Garrick's verse is not inapplicable to each—

"If *genius* fire thee, reader, stay;
If *nature* tonch thee, drop a tear;
If neither move thee, turn away,
For Hogarth's honoured dust lies here."

It is said to be a characteristic of genius to rise superior to the laws and rules which duller minds submit to, and Kent early exhibited this characteristic by escaping without permission from his apprenticeship, and proceeding to London. That he had shown artistic ability has the strong evidence that some gentlemen of his native county raised a sum sufficient to pay his expenses to Rome, and thither he proceeded in 1710. That his friends were not deceived is shown by his obtaining, after two years' study under Cavalier Luti, a prize for drawing in the Academy of St. Luke, and two medals from the Pope. These honours, however, did not add to his resources, and he was only extricated from difficulties by the liberality of Sir William Wentworth and the Earl of Burlington, of whom the last-named became his munificent patron, and with whom he returned to England in 1719. Kent was then in his thirty-fourth year, and from that time until his death, thirty years subsequently, he resided with the Earl. That nobleman, says Walpole, who knew them both, "discovered the rich vein of genius that had been hid from the artist himself"—that vein of genius was of architecture and garden designing; yet there was a fashion to employ him in all kinds of ornamental work, and, says Walpole—

"Kent's style predominated authoritatively during his life; and his oracle was so much consulted by all who affected taste, that nothing was thought compleat without his assistance. He was not only consulted for furniture, as frames of pictures, glasses, tables, chairs, &c., but for plate, for a barge, for a cradle. And so impetuous was fashion, that two great ladies prevailed on him to make designs for their birthday gowns. The one he dressed in a petticoat decorated with columns of the five orders: the other like a bronze, in a copper-coloured sattin with ornaments of gold."

But as an architect his taste was with more justice admired, and many specimens as evidence remain besides Holkham, which he considered his masterpiece. Connected with architecture is his only published work. In this he was assisted by the Earl of Burlington. It appeared first in 1727, and is entitled "The Designs of Inigo Jones, with some Additions." His professional success was aided by his genial humour, polished probably by contiuued intercourse with the leaders of high society. He is frequently mentioned as being in that high circle, and Walpole, in a letter to Sir Horace Mann, relates that "Lady Townsend told him she was forced to have an issue on one side of her head for her eyes, and that Kent advised her to have another on the other side for symmetry!"

As a designer and planter of gardens and extensive pleasure grounds he is entitled to our notice iu these columns. In our notes relative to Mr. George London we quoted Switzer's opinion that he was not so excelling as a garden designer as he was as a horticulturist. Switzer repeats this estimate of Mr. London more than once, and, as an illustration, tells that at Castle Howard Mr. London wished to bave a star-form plantation, but the Earl of Carlisle would not consent; and it became so evident that it would have spoiled the effect of the wood, that it was a proverb in his time and at the place, "York against London." It is remarkable, but not unusual, that the critic was not superior to him he flagellated, for Switzer, in his "Icnographia," has published numerous designs of pleasure gardens which no ingenuity could surpass in mathematical formality and sameness.

"No pleasing intricacies intervene
No artful wildness to perplex the scene;
Grove nods at grove, each alley has a brother,
And half the platform just reflects the other."

We will now briefly show how Kent excelled his two immediate predecessors and partly contemporaries.

Walpole thus sketches the kind of garden they constructed:—

"At lady Orford's, at Piddletown, in Dorsetshire, there was, when my brother married, a double inclosure of thirteen gardens, each I suppose not much above an hundred yards square, with an enfilade of correspondent gates; and before you arrived at these, you passed a narrow gut between two stone terrasses, that rose above your head, and which were crowned by a line of pyramidal Yews. A bowling-green was all the lawn admitted in those times, a circular lake the extent of magnificence.

"Yet though these and such preposterous inconveniencies prevailed

from age to age, good sense in this country had perceived the want of something at once more grand and more natural.

"At that moment appeared *Kent*, painter enough to taste the charms of landscape, bold and opinionative enough to dare and to dictate, and born with a genius to strike out a great system from the twilight of imperfect essays. He leaped the fence, and saw that all nature was a garden. He felt the delicious contrast of hill and valley changing imperceptibly into each other, tasted the beauty of the gentle swell, or concave scoop, and remarked how loose groves crowned an easy eminence with happy ornament, and while they called in the distant view between their graceful stems, removed and extended the perspective by delusive comparison.

"Thus the pencil of his imagination bestowed all the arts of landscape on the scenes he handled. The great principles on which he worked were perspective, and light and shade. Groupes of trees broke too uniform or too extensive a lawn; evergreens and woods were opposed to the glare of the champain, and where the view was less fortunate, or so much exposed as to be beheld at once, he blotted out some parts by thick shades, to divide it into variety, or to make the richest scene more enchanting by reserving it to a farther advance of the spectator's step. Thus selecting favourite objects, and veiling deformities by screens of plantation; sometimes allowing the rudest waste to add its soil to the richest theatre, he realised the compositions of the greatest masters in painting. Where objects were wanting to animate his horizon, his taste as an architect could bestow immediate termination. His buildings, his seats, his temples, were more the works of his pencil than of his compasses. We owe the restoration of Greece and the diffusion of architecture to his skill in landscape.

"But of all the beauties he added to the face of this beautiful country, none surpassed his management of water. Adieu to canals, circular basons, and cascades tumbling down marble steps, that last absurd magnificence of Italian and French villas. The forced elevation of cataracts was no more. The gentle stream was taught to serpentise seemingly at its pleasure, and where discontinued by different levels, its course appeared to be concealed by thickets properly interspersed, and glittered again at a distance where it might be supposed naturally to arrive. Its borders were smoothed, but preserved their waving irregularity. A few trees scattered here and there on its edges sprinkled the tame bank that accompanied its meanders; and when it disappeared among the hills, shades descending from the heights leaned towards its progress, and framed the distant point of light under which it was lost, as it turned aside to either hand of the blue horizon.

"Thus dealing in none but the colours of nature, and catching its most favourable features, men saw a new creation opening before their eyes. The living landscape was chastened or polished, not transformed. Freedom was given to the forms of trees; they extended their branches unrestricted, and where any eminent Oak, or master Beech had escaped maiming and survived the forest, bush and bramble was removed, and all its honours were restored to distinguish and shade the plain. Where the united plumage of an ancient wood extended wide its undulating canopy, and stood venerable in its darkness, Kent thinned the foremost ranks, and left but so many detached and scattered trees, as softened the approach of gloom, and blended a chequered light with the thus lengthened shadows of the remaining columns."

The grounds he created about a residence, now especially interesting, are thus described by Whateley, another contemporary:—

"A regular plantation has a degree of beauty; but it gives no satisfaction, because we know that the same number of trees might be more beautifully arranged. A disposition, however, in which the lines only are broken, without varying the distances, is less natural than any; for though we cannot find strait lines in a forest, we are habituated to them in the hedgerows of fields; but neither in wild nor in cultivated nature do we ever see trees equidistant from each other: that regularity belongs to art alone. The distances, therefore, should be strikingly different; the trees should gather into groupes, or stand in various irregular lines, and describe several figures: the intervals between them should be contrasted both in shape and in dimensions: a large space should in some places be quite open; in others the trees should be so close together, as hardly to leave a passage between them; and in others as far apart as the connection will allow. In the forms and the varieties of these groupes, these lines, and these openings, principally consists the interior beauty of a grove.

"The force of them is most strongly illustrated at Claremont;* where the walk to the cottage, though destitute of many natural advantages, and eminent for none; though it commands no prospect; though the water below it is a trifling pond; though it has nothing, in short, but inequality of ground to recommend it; is yet the finest part of the garden: for a grove is there planted in a gently curved direction, all along the side of a hill, and on the edge of a wood, which rises above it. Large recesses break it into several clumps, which hang down the declivity; some of them approaching, but none reaching quite to the bottom. Those recesses are so deep as to form great openings in the midst of the grove; they penetrate almost to the covert: but the clumps being all equally suspended from the wood; and a line of open plantation, though sometimes narrow, running constantly along the top; a continuation of grove is preserved, and the connection between the parts is never broken. Even a groupe, which near one of the extremities stands out quite detached, is still in stile so familiar to the rest, as not to lose all relation. Each of these clumps is composed of several others still more intimately united: each is full of groupes, sometimes of no more than two trees; sometimes of four or five; and now and then in larger clusters: an irregular waving line, issuing from some little croud, loses itself in the next; or a few scattered trees drop in a more distant succession from the one to the other. The intervals, winding here like a glade, and widening there into broader openings, differ in extent, in figure, and direction; but all the groupes, the lines, and the intervals, are collected together into large general clumps, each of which is at the same time both compact and free, identical and various. The whole is a place wherein to tarry with secure delight, or saunter with perpetual amusement."

We might add panegyrics from many more competent authorities, such as both the Masons, Coventry, and others, but we have quoted sufficiently.

In addition to his extensive practice as an architect and landscape gardener, he held several public appointments; he was master carpenter, architect, keeper of the pictures, and principal painter to the Crown. He was also commissioner of the Board of Works. He had a pension of £100 for his alterations at Kensington Palace, raising his receipts from public appointments to £600 annually. He was indebted for these appointments to the patronage of the Dukes of Grafton and Newcastle, the Earl of Burlington, and Mr. Pelham; to all of whom and others who had befriended him he bequeathed tokens of gratitude. We need particularise but two of these, and they shall be named in his own words—"To the Earl of Burlington my two yellow marble vases with Vine leaves." Pope met Kent at the Earl of Burlington's, and more than once in his poems spoke favourably of his taste. When mentioning Esher he tells that there

"Kent and Nature vied for Pelham's love."

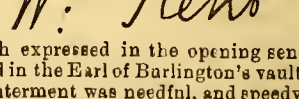
The landscape gardener felt and did not forget the poet's courtesy, as is thus testified—"To Mr. Alexander Pope Raphael's head busto, and the wooden terms, and the alabaster vase." Hogarth was the neighbour of the Earl of Burlington and Kent, for he had a house at Chiswick, still remaining. He resented their and Mr. Pope's neglect by publishing "The Man of Taste." In this picture the gate of Burlington House, designed by Kent, is represented as being whitewashed by Pope, who in the act bespatters the coach of the Duke of Chandos. This picture was the frontispiece of a satire on Pope's Epistle to the Earl, and was soon suppressed, owing, probably, to a threatened prosecution, for on one of the very few copies that survive is an endorsement by an attorney that in the presence of a witness he had purchased it of a bookseller, who acknowledged he had it direct from the printer.

To various of the Boyles, Arundels, and Pelhams Kent bequeathed like remembrances, and lastly, one to the Duke of Grafton, who was one of his most trusting patrons. Walpole telling Sir Horace Mann of his visit to the Duke's residence, Euston Hall, observed, "It is one of the most admired seats in England—in my opinion, because Kent has a most absolute disposition of it. Kent is now so fashionable, that, like Addison's Liberty, he

'Can make bleak rocks and barren mountains smile.'

I believe the Duke wishes he could make them green, too."

In the early spring of 1748, Kent was attacked by an inflammation which terminated in mortification of the bowels. He died on the 20th of April, and evidence of his still strong will, kindly nature, and unclouded reason appears in his signature two days previously to a codicil, bestowing various tokens of remembrance. The signature is misty and tremulous, very different from his usual neat, firm autograph of which this is a fac-simile:—



In accordance with the wish expressed in the opening sentences of his will, he was buried in the Earl of Burlington's vault in Chiswick Church. Speedy interment was needful, and speedy proof of the will followed, for it was registered on the 25th of April. "His fortune," says Walpole, "which with pictures and books, amounted to about £10,000, he divided between his relations and an actress with whom he had long lived in particular friendship." So worded it might be concluded that he left her half his fortune, but it was not so. The actress is described in his will as "Elizabeth Butler, of St. Paul's, Covent Garden," to whom he bequeathed £600, and to her two children, whom he leniently appreciated as his own, £300 each, to be raised by sale of some of his South-Sea stock. He be-

* Near Esher, in Surrey.

queathed to his sister, Esther Pearson, an annuity of £50 out of the rent of his house in Saville Street. To his servant and others he left various small legacies and rings, but the larger portion of his property evidently was divided among his nephews and nieces, the Pearsons, whom he made his residuary legatees.

There are four engraved portraits of Kent, the best being by Ravenet, from a painting by Aikman. They are his only memorials, for not one of his many patrons, nor one of those whom he enriched, erected even a tablet of remembrance. We sought in vain even for the vault in which he was deposited.

THE CLUSTER ALIAS CRITTENDEN DAMSON—FRUIT CULTURE.

In the pages of the Journal, if I remember correctly, my friend Mr. Roach Smith, of Strood, by Rochester (not Stroud as there printed), has given some history of this Kentish Damson. On reading Mr. Robson's account of it I have very recently troubled Mr. Smith to refresh my memory. He tells me that the old tenant of the market garden behind his house, and belonging to him (Mr. Smith), found it many years ago growing in his garden, and gave it to Mr. Crittenden. It should, therefore, be called Herbert's Damson, as he was its original possessor as far as can be known, but as he did not raise it from seed the Cluster will do.

With regard to its productiveness, which Mr. Robson seems to challenge the world to surpass, I have only to state that Mr. Pearson, of Chilwell, has a Damson plantation of something less than two acres, from which he has gathered in a productive season six hundred bushels. This sort is the Prune Damson, larger and superior in flavour to all others. It has downy leaves, and like its congener the Dalrymple Damson, a Scotch sort, is remarkable for its productiveness and superior flavour.

With regard to the productiveness of Plums when planted well and summer-pruned, I can state that from half an acre of Early Rivers and Prolific Plums, pyramids, twenty-five years old and 12 feet apart, I gathered in 1869 150 bushels of fruit, which were all sold by the 4th of August, commencing to send to market on the 25th of July; others made from 10*s.* to 14*s.* per bushel, averaging 12*s.* per bushel. I have often regretted that, instead of planting the trees 12 feet apart, I did not plant them 6 feet apart, for I can now see how by summer-pruning some Plums may be grown at that distance. I have a plantation about eight years old of this kind of Plum planted 6 feet apart, or 1200 to the acre. The trees are now from 9 to 10 feet high, and the most perfect pyramids I ever saw; they are covered with fruit from "tip to toe," and are calculated to give half a bushel per tree. This produce will reach that of the Kentish Damsons; and when the trees are double their present age—which I shall not see—they will be remarkable. They are market-garden pruned in June and again in August. There are a few other kinds of Plums that bear this summer-pruning well, and among them one or two seedlings that have a pyramidal growth and productive nature.

I should mention that in the plantation last mentioned the trees are very luxuriant, and would make shoots (those unpruned do so) from 5 to 7 feet long. But that summer-pruning how efficient, and at present not comprehended, at least by Kentish growers! By the end of the century fruit will be *cultivated*, not *grown* as at present.

My Apples *grown* on old standards—the Dumelow's Seedling—went to market in December, they rotted fast; the same sort *cultivated* on Paradise stocks 4 feet apart and summer-pruned, is still sound and very beautiful.—Thos. Rivers.

THE CUCUMBER DISEASE.

I have been growing Cucumbers for the last nine years, and during that time the disease never troubled me but once. My experience has been entirely with dung beds. I have always had Cucumbers early in May, and it was in that month I noticed the disease first—a scab on the fruit and the leaves spotted. I was completely puzzled. It was my first year as gardener, and I never heard of the disease before; and to make the matter worse, my employer wanted a Cucumber for a party on the 15th of May. I sat down on the frame and began to think. After a short time a thought struck me; I stood up, rubbed my eyes, took off the lights, felt the top of the bed—it was too damp. I then bared the roots and found them too dry and hot. I scraped off as much of the sour soil as I could, picked off all the fruit and spotted leaves, put in some fresh soil, with a little charcoal, gave a good watering, picked off all the flowers as they appeared for three weeks, and layered all the shoots except the very weak ones. At the end of the third week I had fine healthy plants, and a good crop of fruit which lasted until the end of November without one spotted leaf or fruit. I am of opinion there are but two causes for the disease—namely, too little water and air, with a high temperature, and too much water and not enough of air when the heat falls. Such treatment causes a canker in the roots, which, I am convinced, produces the spot in the leaves and scab on the fruit.—W. C. Burchill, *Gardener to Dr. Wheatley, Abbey View, Sligo.*

CROSS-BREEDING THE MIMULUS.

The Mimulus has been one of my favourite flowers for the past thirty years, during which period every species that could be obtained has been carefully subjected to trial to ascertain its capability of hybridising; but as it is not important to enumerate my many failures, it suffices to say that the introduction of Mimulus cupreus has enabled me to produce a great variety of novelties, which, though still susceptible of considerable improvement, are much in advance of those that are in general cultivation. It is, therefore, my intention to show how easily anyone who will observe the rules of isolation, preparation, and registration may, with the assistance of a few minor instructions, not only ensure success but also run me a very hard race.

Discarding all consideration of the so-called double varieties which are yet too imperfect to merit attention I will confine my remarks to the old form, the flowers of which ought not to be less than 2 inches in diameter, of thick substance in the petals, and circular in outline. The combinations of colours and markings are so infinite as to defy minute description. Probably selfs, such as white, pearl, mauve, magenta, crimson, rose, orange, scarlet, and bronze are amongst the most effective. After five years of careful selection and crossing my labour has been rewarded with carnation stripes and marks, which, with a little more care, will probably soon introduce a handsome and distinct strain. Other promising novelties are also being slowly advanced.

With the exception of selfs, light shades, and bordered varieties, the lip of the Mimulus should be of a darker shade than the other petals; spotted and blotched varieties, including the throat, ought to display four or five shades of colour. As a rule it may be considered that seedlings have a tendency to assume the colour of the male parent; for instance, last year a pod of seed was ripened on a variegated plant that had bronzy orange flowers which had been fertilised with a mauve variety. Fifteen plants were raised, all of which have variegated foliage, while their flowers are all either mauve or very light shades.

I will now describe my practice, which, with more space and conveniences than I can appropriate to this particular flower, may be considerably improved by those who do not labour under similar disadvantages.

Last year about the third week in February the first sowing of seed was made in 6 inch pots; these were placed on a shelf in a cold greenhouse. When the seedlings were large enough to handle they were pricked into seed pans, allowing nearly 1 inch to each plant; the pans were then arranged in an ordinary cold two-light frame, which holds thirty pans, or 1500 plants. There they began to flower exactly twelve weeks from the time of sowing, and by the end of June they (1200) had all flowered. The inferior flowers were weeded out as soon as they opened, while those that exhibited a decided improvement were immediately potted off, and were without delay either seeded or used for fertilising purposes. By adopting these means, between the 25th of June and the 10th of July a crop of seed was secured, which was sown as each pod was gathered, the result being that the plants (1500) from this sowing began to bloom in seven weeks and three days; 1200 of these had flowered by the end of October; the remaining 300 were turned into the border. Seed was ripened from the best of this batch, and a selection made from established varieties, a part of which was not gathered before the beginning of December.

Though the middle of September is late enough to set seed so as to ensure its ripening without much loss and trouble, it is wise to keep plants ready prepared, so as to be able to fertilise with seedlings that flower after that date. Under these circumstances two or three pods may be impregnated, though usually one good pod of seed of each cross is sufficient to produce 100 to 150 plants.

The calyx having been cut to remove the anthers, the seed pod may shortly before it is ripe be enclosed in a small muslin bag, otherwise much of the seed will be lost.

The green fly will if undisturbed soon spoil a collection of Mimulus. Fumigating is troublesome and very apt to scald the plants; but this pest may easily be kept under by syringing the plants when in the seed pans, or by dipping, when in pots, in a solution prepared with 10 ozs. African aloes, 3 ozs. potash, 16 ozs. soft soap, and 12 gallons of water. This solution will keep good for weeks, and is very useful in destroying fly on Rose trees and other plants that are in the open border.

About twenty years ago Professor Lindley most obligingly sent me flowers of Mimulus tricolor; since then I have neither seen nor been able to hear of it. Can you or some of your numerous readers furnish any recent information about it?—Abraham Clapham.

A LITTLE MORE ON THE CULTURE OF THE VIOLET.

Living so far north, and 500 feet above the level of the sea, a few words from me may not be out of place, as I have for eleven years flowered Violets successfully during nine months out of the twelve.

Like your correspondent "J. W., *Lincoln*," I confine myself to five sorts—namely, Neapolitan, Czar, Single White, Single Russian, and Double Russian. I will take them in the order in which I have named them. My practice is in April to divide the Neapolitan Violets, and transplant them from a cold frame, under which they are kept from September, to a north-east border where they are shaded from the midday sun. I think nothing so injurious to the well-being of Violets as for them to be exposed to a scorching sun, particularly during such summers as we have had for the last three years. The same plants are taken up and planted in the cold frame early in September, a little fresh soil being added, also some well-decayed leaf soil. All the runners are cut off at the same time. If the plants are kept a little close, and a skiff with the syringe given morning and evening for a few days should the weather be hot and dry, they will soon repay the trouble, provided the frame is open to the morning sun, closed two or three hours before sunset, and well covered in frosty weather with loose straw. That which has been used in the stable I find the best to keep out frost. By following the above method I have gathered Neapolitan Violets from September up to the following May.

Next in order is The Czar, which, on account of its long flower stalk, is very useful for bouquets or in dressing vases. It is also valuable from its hardiness, at least it has been so with me. It was quite green after the severe winter, and flowered beautifully as soon as the frost was over.

I find that the Single White does not like transplanting every year, for I have not had a single flower on some plants which I transplanted last spring, while some left in the same place as that in which they have been ever since I came here flowered beautifully.

My favourite, however, is the Single Russian. When it is transplanted every year and grown where it is shaded from the midday sun, I have had it in flower from July until the end of March, provided the summer was not too dry and the winter was mild; but this year is an exception, for I have lost from frost nearly all my plants of it that were in a south-west border near the Box.

The next variety in order is the Double Russian, which I find most difficult to grow. I have planted it in the frame with the Neapolitan, but it was always eaten up with the red spider. This year I left the plants out all the winter, and nearly lost them owing to frost; but after taking them up, dividing, and transplanting, they have in a great measure recovered and are showing flowers.

I make it a practice to plant my Violets where the water can be had close at hand, and I give them a good soaking twice a-week when the weather is dry, also a good dusting of soot and guano about once a-fortnight just before watering, and after the sun is off the plants, whether there is any red spider or not. This acts as a preventive. Being very much troubled with the wireworms, I find no better remedy than soot and guano. In fact I cannot grow many plants here without it.

I ought to have stated before that I have transplanted all my Violets except the Single White to the north-east border, on account of the very hot dry summers we have lately had. It will therefore be necessary to transplant them again early in the autumn to some warm corner or border. I have never adopted this course before, but, except as regards the Neapolitan, I do not think it will much retard their blooming if care be taken to lift the plants with good balls, and to well water them if the soil is dry.—T. Elcome, *North Wales*.

STRAWBERRY CULTURE AND COMING CROP.

The statements of the gardeners in this neighbourhood, and my own observations, remove from my mind all apprehensions of a light crop of this fruit. I looked over my plants this morning, and found them throwing up very strong flower-stems, and having foliage remarkably luxuriant, considering the severity of the winter and the prevalence of cutting east winds.

My mode of culture is simple, and consists in taking off the runners as early as possible in the season, and I am very particular to pull up all unfruitful plants. I plant the runners a few inches apart until well rooted, taking care to shade and water for a few days. About the end of August I plant them in their permanent beds.

Last season I was very short of that most useful sort La Constante, and so adopted the system of dividing the old roots, and now in appearance they are quite equal to the best runners I have.

In my opinion no Strawberry beds should be allowed to stand more than three years. I plant a piece of ground every year, and destroy those I have fruited three seasons. I think it is a great mistake to dig between the rows. A good plan is to cut off all the runners and dead leaves in the autumn, and then put on a layer of sifted leaf mould an inch deep, and in the following April to give them a good mulching with partly-decayed stable manure. After the first flowers are set give the plants copious waterings with weak liquid manure, always in the evening.

Three things Strawberries must have if a good crop is expected—viz., plenty of room, plenty of air, and plenty of water in dry weather.

I may add that the general fruit crop looks most promising in this district; Apples, Cherries, Plums, and bush fruit being remarkably full of bloom, and many of them well set.—Richard Jameson, *Gargrave*.

EFFECTS OF LAST WINTER.

As a record of the hardiness of various shrubs is always useful I send you the following notes. The situation of the garden, which is at Colwyn Bay, near Conway, is unusually favourable, yet a registering minimum thermometer showed a lowest temperature of 11°—*i.e.*, 21° below freezing, and nearly all my East Lothian and Emperor Stocks were killed. Eugenia apiculata, young shoots slightly injured. Euonymus japonicus aureo-variegatus, young shoots killed, plants not otherwise injured. Pinus longifolius, killed. Skimmia oblata, Elæagnus japonica variegata, E. pungens variegata, Osmanthus ilicifolius, O. ilicifolius variegatus, Cryptomeria elegans, Thujopsis dolabrata, Pinus insignis, Cupressus macrocarpa, Spiræa Lindleyi, S. Reevesi, S. Hookeri, Griselinia littoralis, Cupressus sempervirens, Eurya japonica variegata are quite uninjured. Rhododendron arboreum is nearly if not quite killed. Clianthus puniceus grown from seed stood the weather uninjured against a south wall, though otherwise unprotected.—Alfred O. Walker.

CYPRIPEDIUM NIVEUM.

The genus Cypripedium has many claims upon the attention of lovers and growers of plants, for the species are nearly all very easily grown into good specimens; their flowers are extremely beautiful, in many instances richly coloured, and remain a very long time in all their glory, to which may be added a singular and unique structure, which never fails to attract the eye of even the most casual observer.

Amongst the many fine kinds of this genus to be found in our gardens, the species which the artist so faithfully pourtrayed last week takes first rank. It is a close, compact-growing species, producing thick fleshy leaves, which are from 4 to 6 inches long, by 1½ inch broad, oblong-obtuse, dark green above, with irregular blotches and streaks of metallic white; the under side is dark purple. Peduncle about 6 inches long, usually one-flowered; sometimes, however, two are produced. The dorsal sepal is large, broadly ovate, pure satiny white within, stained with rosy purple outside, lower sepals coalescing into one, considerably smaller than the superior one, ovate,

white within, stained with rosy-purple without. Petals very broad, oblong, obtuse, emarginate at the apex, and somewhat cuneate at the base, pure soft white, sparingly freckled with rosy purple or violet dots. Lip saccate, about as large as a dove's egg, white, with a few violet dots. Staminode white, with a blotch of clear lemon colour.

C. niveum is at once a chaste and most attractive plant when in bloom, and entirely distinct from any other species hitherto introduced. It is a native of India, probably of Burmah or Siam, but the exact locality whence it was brought is not known. The usual compost (peat, sand, and sphagnum) suits this species well. It should be placed in the warm end of the East Indian house, and treated liberally to water, but care must be taken to have the pots well drained, to prevent stagnant moisture destroying the roots. The supply of water must be decreased during winter, but at the same time it should be borne in mind that as these plants are destitute of pseudo-bulbs, they cannot suffer want of moisture with impunity.—Experto Crede.

ROYAL HORTICULTURAL SOCIETY.

May 17th.

On this occasion the Show was held in a spacious tent at the southern side of the garden. Instead of stages for the plants turf banks were employed, and with excellent effect. In the centre was a circle with a large Palm set round with Roses, Azaleas, and Rhododendrons. The broad central walk of the tent, with banks of flowers on each side, was curved out to suit the outline of the circle, and the banks separated from the higher ground on each side by a dwarf Box hedge, which served as a backing to the flowers, without at the same time obstructing the view of what was beyond. The effect of this arrangement was very good, but would have been improved by a more plentiful introduction of larger specimens. The main features of the Exhibition were Pelargoniums, Heaths, stove and greenhouse plants, and Palms, and though these did not fill up the large area of the tent so fully as desirable, still the display was both extensive and good.

For nine Show Pelargoniums in 8-inch pots Mr. Ward, gardener to F. G. Wilkins, Esq., Leyton, was first with magnificent plants 4 feet in diameter, in all respects admirably grown, being covered with bloom, with abundance coming on, and the foliage fresh and without being in the slightest degree "drawn." The kinds were Cunqueror, Patroness, Mdlle. Patti, Lilacina, Alabama, Rose Celestial a splendid specimen, Empress Eugénie, Pericles, and Exhibitor. The second prize went to Messrs. Dobson & Sons, of Isleworth, who had fine plants of Rose Celestial, Desdemona, and Lilacina. For six Mr. Ward was again first with plants averaging 3 feet across, and, like his larger specimens, admirably grown. Rob Roy and Beacon were extremely brilliant, while of light kinds Desdemona was large and very fine; the others were Empress Eugénie, Maid of Honour, and Fair Rosamond. Mr. James, gardener to W. F. Watson, Esq., Isleworth, was second.

Of Fancy Pelargoniums, the best six in the amateurs' class came from Mr. Weir, gardener to Mrs. Hodgson, Hampstead; the second best from Mr. James; and in the nurserymen's class, Messrs. Dobson were the only exhibitors, taking the first prize. Acme, Godfrey, Ellen Beck, Lady Craven, and Carminatum were the best.

Class 5 was for six Clematis. In this the only exhibitor was Mr. Charles Noble, of Bagshot, who took a first prize with C. Jackmanni, and beautifully-flowered plants 18 inches high of Miss Bateman, Lord Londesborough, Mrs. Howard Vyse, Harry Richmond, and Miss Howard. On Miss Bateman there were three dozen blooms.

The next class, 6, was for Palms. The best six came from Mr. Williams, Holloway, and consisted of noble specimens of Phœnicophorium sechellarum, Latania borbonica, Chamærops humilis, Phœnix sylvestris, Corypha australis, and Verschaffeltia splendida. Messrs. Rollisson, Tooting, were second with Verschaffeltia splendida, Pritchardia pacifica, Areca Verschaffelti, Areca lutescens, a very graceful species, Acanthophœnix crinita, and Latania aurea. Messrs. Lee also exhibited an excellent group not for competition.

In the open class for eight Cape Heaths, the first position was taken by Mr. Ward, with a very large plant of Erica tricolor elegans, E. tricolor Wilsoni in fine bloom, excellent specimens of elegans, Cavendishii, depressa multiflora, and florida, together with a good plant of Caudolleana, and ventricosa grandiflora. Messrs. Jackson & Son, of Kingston, were second with a fine example of the white perspicua nana, ventricosa coccinea minor blooming most profusely, and good specimens of several others. The third prize went to Mr. Morse, Epsom, who had among others two pretty sorts, E. mirabilis and E. mundula, and the free-flowering effective white species candidissima. For six Heaths, Mr. Carr, gardener to P. L. Hinds, Esq., Byfleet Lodge, was first, with among others beautifully-bloomed specimens of ventricosa magnifica, ventricosa coccinea minor, and mutabilis. Mr. Ward was second with ventricosa magnifica, very brilliant; and Mr. Wheeler, gardener to Sir F. H. Goldsmid, Bart., M.P., Regent's Park, third. Of twelve Heaths in 12-inch pots, Mr. Ward furnished admirably-grown specimens full of bloom, taking a first prize, the second and third going to Messrs. Jackson and Mr. Wheeler, gardener to J. Phillpot, Esq., Stamford Hill.

Stove Ferns in collections of six came next in the schedule. In the amateurs' class Mr. Carr was first with a very beautiful Lomaria, said to be a hybrid, elegant in its habit; Davallia pyxidata, a large Platycerium grande, and the beautiful Adiantum farleyense. Mr. Smith, gardener to C. Walton, Esq., Manor House, Acton, was second. In the nurserymen's class Mr. Williams had lovely examples of Cibotium Schiedei; two fine Gleicheniss—viz., speluncæ and rupestris, each about 4 feet in diameter; Todea superba, a large Bird's-nest Fern, and Todea africana. For this collection the first prize was awarded, and the second went to Messrs. Bell & Thorpe, Stratford-on-Avon, who had a pretty thriving specimen of the Bird's-nest Fern, Davallia pyxidata, and Lomaria gibba.

Stove and greenhouse plants were shown in 12-inch pots, and for that limited size of pot many of the specimens were remarkably good. For twenty Mr. Ward was first with three Heaths, an Ixora, Dracophyllum gracile in excellent bloom, a showy scarlet Clerodendron speciosum, C. Balfourii in fine bloom, Francisceas, Anthurium Scherzerianum, Chorozema Chandleri, Acrophyllum venosum, Statices, Azaleas, and other plants. The whole of these were not only well grown, but in excellent bloom. Messrs. Jackson, of Kingston, were second, and Mr. Kemp, gardener to the Duke of Northumberland, third. In these collections were excellent examples of Aphelexes, Boronias, Heaths, Azaleas, Acrophyllum venosum, and Chorozemas. For nine specimens Mr. Carr was first with a collection, in which were a very finely bloomed Chorozema cordatum elegans, Erica propendens and Victoria, and Aphelexis macrantha purpurea. Mr. Wheeler, gardener to J. Phillpot, Esq., who was second, had a fine example of Bougainvillea glabra.

Of fine-foliaged plants Mr. Bull, Mr. Williams, Messrs. Bell and Thorpe, Mr. G. Wheeler, Messrs. Lee, and Messrs. A. Henderson exhibited groups. Mr. Bull was first for a group of twenty with Palms, Cycads, Dracænas, and Yuccas. Mr. Williams, who was second, had Sarracenia Drummondi and purpurea fine, Alocasia Lowii and metallica, variegated New Zealand Flax, Yuccas, Dracænas, and Palms. Messrs. Bell & Thorpe were third. An extra prize was given to Messrs. A. Henderson.

In the miscellaneous class, always a large one, but this time less so than usual, Messrs. Lee exhibited an interesting mixed group of plants in flower, intermixed with others remarkable for the beauty of their foliage. Messrs. Rollisson sent a number of fine Gloxinias, various in colours; Messrs. Dick Radclyffe & Co. a tasteful aquarium, with a stand decorated with Ferns; Mr. Bull a group of Orchids, Palms, and new and rare plants, among which was Primula japonica, noticed in our last report, and which is, doubtless, destined to become one of our favourite out-door and cool conservatory plants; and Mr. Turner, of Slough, several fine baskets of Tricolor Pelargoniums, a stand of Tulips, and one of The Bride Clove Carnation, together with Azaleas and Roses.

M. Alexis Dallière, of Ghent, sent in tubs some remarkably fine specimens of Bays, Gold and Silver Hollies, and Chamærops humilis, the last about 7 feet high. Messrs. Lane & Son had a very attractive group of Roses, Azaleas, Rhododendrons, &c., forming the centre of the exhibition tent; Mr. Ware, of Tottenham, one of spring flowers; and Messrs. E. G. Henderson & Sons, a small group in which Thalictrum adiantifolium was very effective by its Fern-like, deep green, beautifully divided leaves. The same firm also sent a number of seedling Mimuluses, together with a golden-leaved Ivy, which, if it prove constant to its character, will be an acquisition.

Fruit Committee.—G. E. Blenkins, Esq., in the chair. Mr. Small, Nurseries, Culnbrook, sent examples of Small's Lord Raglan Apple, the flavour of which was gone. Mr. Turner, Royal Nurseries, Slough, sent two dishes of Gooseberry Pippin, a good keeping kitchen Apple, which was in excellent condition. Mr. Gardiner, Lower Eatington Park, Stratford-on-Avon, sent a collection of thirteen varieties of Apples in very good condition, to which a special certificate was awarded for the excellent way in which they had been kept. Mr. Searle, gardener to B. C. Steele, Esq., Marlesford Lodge, Hammersmith, sent three fruit of a large Lemon of good quality. Mr. A. Colburn, gardener to J. Blyth, Esq., Woolhampton, sent some very large and fine examples of Loquats, to which a special certificate was awarded. Mr. J. Pottle, gardener to B. D. Colvin, Esq., Woodbridge, Suffolk, sent a dish of new Potatoes, named Prince Teck—a good-looking Kidney, of good quality when cooked. M. Linden, of Brussels, sent examples of a seedling Pear, raised from Beurré Clairgeau, very much in appearance of that variety. They were, however, too far gone for the Committee to pass any opinion upon. Mr. Standish, of the Royal Nursery, Ascot, sent bunches of his new seedling Grape Royal Ascot Frontignan, the great merit of which is its earliness and fine flavour. The fruit was grown in the same house with Black Hamburgh, of which a bunch not yet coloured was also shown, while the seedling was perfectly ripe. The Vines were started early in January. It was raised from Muscat Blanc de Saumur and Chasselas Musqué. A first-class certificate was awarded to it.

A communication was read from Mr. Temple, of Balbirnie, describing the mode in which the Lady Downe's Grapes exhibited at last meeting were kept. It was as follows:—

"The Lady Downe's Grape referred to were ripe in August, cut in November (I think some earlier and some later, but these were among the earliest). The temperature would average from 40° to 50°, but sometimes down nearly to the freezing point. They were kept in the dark. The

structure in which they were kept is a common fruit room where Apples, Pears, seed Potatoes, &c., were crammed. The water in the bottles was never changed entirely, but a little added once or twice. A few pieces of charcoal were placed in many of the bottles, though some had none, and showed no difference in keeping, taste, &c. The water was partly rain and spring water from a tank used to catch all the waste water. The ends of the wood above the bunch, about half an inch long, were rubbed with Thomson's Styptic. The fruit room was frequently fumigated with sulphur, a practice we perform to keep insects and mice from establishing their quarters. About 120 bunches were thus kept, and I am not aware that any of them decayed, except a few berries in April on some very close bunches.

"What I attribute their keeping so sound to is thorough ripening early in the season, firing hard, with top and front air on a month or six weeks after the fruit was apparently 'finished.' We have practised this system for five years past with the same results, and have no difficulty in keeping white and black Muscats in good condition till March. We had some this season till the 4th of that month, which were cut early last August. —Yours respectfully, M. Temple."

"P.S.—If you should desire any Grapes sent a month hence or later, probably I may be able to do so, as we have a quantity still in a small shed, which are finer than those sent. The latest we have kept Lady Downe's in good condition was the 10th of June. We exhibited a bunch three years ago on that date. They were coloured in the July of the previous year.—M. T."

A special certificate was awarded, and the thanks of the Committee passed to Mr. Temple for his communication.

For the best collection of forced fruits, Mr. Miles, gardener to Lord Carrington, Wycombe Abbey, had a first prize for admirably-grown fruit.

For Messrs. Carter's prizes there was only one exhibitor, Mr. G. Brown, gardener to C. Mackenzie, Esq., Fawley Court, Great Marlow, who had a first prize in the class for Carter's First Crop Pea, sown on turf November 3rd, planted under walls March 6th. A like award was made to the same exhibitor in the class for any other early Pea, for Little Gem, sown November 1st and planted March 6th. Both were very good samples for the time of year.

Floral Committee.—Mr. J. Fraser in the chair. Mr. Denning, gardener to Lord Londesborough, Grimston Park, had a special certificate for a very splendid collection of Orchids, in which a magnificent specimen of Vanda teres (Anderson's variety), with nearly, if not quite, a score of clusters of blossoms was most conspicuous. For this a special certificate was awarded. In the same splendid collection were beautiful examples of Aërides Lindleyanum, varieties of Cattleya Mossiæ, and Saccolabium præmorsum. A special certificate was given to the collection, and a first-class certificate to Cattleya Reineckiana, white, with a white, yellow, and purple lip, a very beautiful variety of one of the most beautiful of all Orchids.

Mr. W. Thompson, of Ipswich, sent Collinsia violacea, a hardy Californian annual, violet, with white and lemon upper petals. This received a first-class certificate. It was, however, as shown, rather weedy, but this, no doubt, arose from artificial forwarding; if us compact as the rest of the Collinsias, which are among the most useful and beautiful of the hardy annuals, it will, doubtless, be a gain.

Mr. E. B. Foster, of Clewer, sent several very promising new Show Pelargoniums—Iron Duke, Cæsar, and Brigand. From Mr. Linden, of Brussels, came Masdevallia Lindeni, from New Granada, a beautiful mauve-coloured Orchid, a charming companion to the scarlet Masdevallia Veitchii. This received a first-class certificate. From the same firm came also Odontogloesum luteo-purpureum sceptrum. Mr. Green, gardener to W. Wilson Saunders, Esq., sent a species of Aspasia, past its best; and Messrs. Carter & Co. Lilium Humboldtii.

Mr. Wiggins, gardener to W. Beck, Esq., Isleworth, contributed a number of cut blooms of Pelargoniums, very fine in colour, but without plants no award could be made; and Mr. Badman, Lee Green, double Petunia Princess Louise, a large-flowered variety, of good character. From Mr. Muir, gardener to Sir P. Egerton, Bart., Oulton, came Viola Beauty of Oulton, a yellow variety, said to surpass V. lutea grandiflora; and from Messrs. Lee, of Hammersmith, Lobelia White Perfection, a very promising white-flowered kind, though, as shown, rather too free in growth. E. J. Lowe, Esq., Highfield House, Nottingham, sent several seedling Pansies, very fine in colour, and likely to be useful for bedding purposes, one a cross-bred between the fancy and the Alpine Pansies. Mauve Queen Intermediate Stock, very free-flowering and good, from Mr. G. Smith, received a first-class certificate.

Mr. Turner, of Slough, had a first-class certificate for Rose Paul Néron, a very splendid deep rose-coloured Rose, of the largest size; also for Tricolor Pelargonium Mrs. Rousby, which we have before reported on, and Baroness Burdett Coutts. The same award was made to Mr. Turner for Azalea Comtesse de Flandres, of immense size, rose, spotted with crimson. A first-class certificate was given to Mr. Williams, of Holloway, for Adiantum asarifolium, a very fine species, partaking in character of A. reniforme; and special certificates were awarded to M. Dallière, of Ghent, for a remarkably fine specimen of Anthurium Scherzerianum with thirteen spathes; also for Azalea La Reine. Mr. Wilson, gardener to W. Marshall, Esq., had a like award for a most beautiful example of Hæmanthus tenuiflorus. Messrs. Veitch likewise obtained a special certificate for a very splendid collection of cut Rhododendron blooms.

Solution for Destroying Insects.—M. Cloez, of the Garden of the Paris Museum, gives, in the *Revue Horticole*, an efficacious recipe for destroying plant-lice and other insects:—3½ ozs. quassia chips and 5 drachms staveacre seeds, in powder, are placed in seven pints of water and boiled down to five pints. When cooled, the strained liquid is ready for use, either in a watering-pot or syringe.

RABBITS AND HARES versus TREES.

Judging from Mr. Abbey's list, in your paper of the 27th ult., of the trees and shrubs which hares and rabbits have eaten or spared during the past winter, and from my own experience, I am forced to conclude either that these animals are somewhat capricious in their tastes, or that their ravages may be prevented by supplying them with food they like better than the bark or leaflets of trees and shrubs. I have here a number of young Laburnums not one of which has been touched, though some Wallflowers and Alyssum saxatile growing close to them were cropped. A near neighbour of mine had his Sedums eaten, whilst not one of mine was touched. One Scotch Fir, about 8 feet high, has been barked all round, but I have been unable to find another similar instance, although my land and the country for miles round is covered with these trees.—Hermit, *Sunninghill.*

EMBRYONIC INARCHING.

Some years ago, we regarded the idea that two cells of distinct kinds would unite and form a third variety, as a fable. Thus, when Mr. Blodgett represented that his sweet and sour Apple resulted from a union of buds in grafting, we dissented. It was not that we doubted that the experiments were made as represented, but that we thought the results obtained were due to other laws than that of cell union; and that the manner in which the two buds were united, in the one budding operation, had nothing to do with the case. It has always been our custom, however, not to feel too sure that our own notions of things are right, and in this spirit, though starting with the idea of this cell union being impossible, we have looked about to see what the wild waves of Nature are saying about the question; and gradually we have been brought to believe that this cell union, and consequent production of new forms, is not the absurd thing we once thought it was.

The writer of this has at various times called the attention of scientific institutions to facts which cannot be explained in any other way, than that the appearances were due to embryonic inarching. This has gradually taken shape, until with similar observations in Europe, both prior and subsequent to his own, we think the point is fully established; and the great point contended for by Mr. Blodgett is gained—namely, the perfect possibility of the fruit production for which he contends.—(*American Gardener's Monthly.*)

PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

Philodendron Williamsii (Mr. Williams's Philodendron). *Nat. ord.*, Araceæ. *Linn.*, Monœcia Triandria.—Native of Brazil. Requires to be in the aquarium of a stove.—(*Bot. Mag.*, *t.* 5899.)

Baptisia leucophœa (Bright-white Baptisia). *Nat. ord.*, Leguminosæ. *Linn.*, Decandria Monogynia.—Native of United States. Flowers white, tinged with greenish yellow. Hardy herbaceous plant.—(*Ibid.*, *t.* 5900.)

Nerine pudica (Chaste Nerine). *Nat. ord.*, Amaryllidaceæ. *Linn.*, Hexandria Monogynia.—Native of South Africa. Flowers white, with crimson streak down the centre of each section. —(*Ibid.*, *t.* 5901.)

Epidendrum erectum (Exalted Epidendrum). *Nat. ord.*, Orchidaceæ. *Linn.*, Gynandria Monandria.—Believed to be a native of New Grenada. Flowers purplish crimson.—(*Ibid.*, *t.* 5902.)

Hæmanthus deformis (Ill-shaped Hæmanthus). *Nat. ord.*, Amaryllidaceæ. *Linn.*, Hexandria Monogynia.—Native of Natal. "A grotesquely ugly Cape bulb." Flowers ivory white. —(*Ibid.*, *t.* 5903.)

Peach—*Lord Palmerston.*—"The variety is one of Mr. Rivers's recent valuable acquisitions, and is of the race of the Pavie de Pompone, a very large clingstone Peach ripening in October. The new variety retains to a slight extent this adherent quality of the flesh. The Rev. W. F. Radclyffe's note concerning it runs as follows:—

"'Lord Palmerston is a very large Peach, the largest here. I sent the artist three specimens, one not painted 10 inches in circumference the two, portrayed most faithfully, were rather

over 9 inches, and were not quite fully grown. I thought they would travel better than when fully ripe. It is a very valuable Peach. Its season on a south wall, in my exposed garden, is from the last week in September to October 11th. In more genial situations, I suppose from the second week in September to October 1st would be about its season. It is somewhat like, but larger than, the Princess of Wales—a most beautiful late Peach, of the same season. The flowers of both are amongst the largest of all Peaches, and afford quite a floral sight. The trees of both are most vigorous and prolific. Lord Palmerston is finely shaped. The skin, when covered with leaves, as was the case with the 10-inch Peach sent, is rich cream, without any marking. The two figured were exposed to the light. The colour of the skin is creamy, with either pink suffusion, or mottled like the specimens figured. The flesh is firm, and slightly adherent when not fully ripened; but when the flesh is fully matured it is melting, and also rich for so late a season. Like the Princess of Wales, it is very red at the stone. It was raised from the Princess of Wales Peach, which variety was raised from Pavie de Pompone. The glands are round, or nearly so. This description, like the portrait, is, I believe, faithful.'

"The fruit, at the end of September last, were fully 9 inches in circumference. The skin was of a pale sulphur yellow, the exposed parts being flushed with dull crimson, over which was disposed in crowded blotches a deeper or purplish-red tint, the whole of the highly-coloured part of the fruit thus acquiring a marbled character. The flesh was firm, whitish in colour, becoming red next the stone, and of rich and pleasant flavour, though, being prematurely gathered, it could not have been at its best. The glands of the leaves were very small, roundish-reniform.

"Fruit-growers owe a special debt of gratitude to Mr. Rivers for the valuable additions which, through the aid of orchard-house culture, he has been enabled to make during the last few years to our collections of Peaches and Nectarines especially. The acquisitions amongst early and late varieties are particularly valuable; and of that which we now figure Dr. Hogg remarks, 'This will prove one of the best, as it is one of the largest late Peaches.'"—(*Florist and Pomologist*, 3 s., iv. 97)

TENACITY OF LIFE IN SOME SEA ANEMONES.

The following instance of the wonderful tenacity of life in a Sea Anemone will, I think, interest you:—

I had occasion to move my aquarium last Saturday (April 29th), and in taking out the various zoophytes found that several Anemones—traglodytes of a most determined character—had so securely fastened themselves into deep crevices that it was impossible to get at them, and I was obliged to leave them to their fate. The tank was then emptied, moved to its new place, filled with cistern water, and thoroughly scrubbed out with a brush. It was then emptied and refilled with fresh water several times, and finally remained, near a window, perfectly dry, and exposed to the sun until Thursday evening, when the sea water was put back. To my astonishment, next morning two of the Anemones out of the five which had been left in the tank were fully expanded and in perfect health, having thus survived between four and five hours' immersion in dirty well water and five days' exposure to the sun and dust! They were, however, in dark corners. Of the other three, two were turned by the sun into regular (marine) mummies, and the third floated up from his seclusion when the water was put in again in that creamy condition so distressing to aquarians. He had been rather damaged in my previous efforts to get him out. The two survivors are both Sagartia traglodytes; the one that had been injured and died was of the same species, and the other two were S. bellis.—Kenneth McKean.

NOTES AND GLEANINGS.

Inquiries having been made for a somewhat fuller definition of the meaning of the phrase, "any branch of British Economic Entomology," used in the announcement of a prize of £5, offered by the Royal Horticultural Society for "the best miscellaneous collection of any branch of British Economic Entomology," we are requested to state that it relates to such departments of Economic Entomology as concern forests, fields, or gardens; as also to insects injurious to manufactured articles, &c., but that it is not intended to include useful insect products, such as honey.

—— Farringdon *versus* Covent Garden.—Now that the trade of Covent Garden is threatened seriously, there are rumours current of intended improvements, the object being to stifle the new movement and save a property which for years has been a disgrace to the metropolis, and a standing insult to the whole fraternity who frequent it for purposes of trade in connection with their calling. Few of our readers, probably, are fully cognisant of the nature of the case. It is not in midday hours when the Central Avenue swarms with genteel visitors, and the flowers and the fruits shine in the full daylight, that Covent Garden can be judged as to its market conveniences for the trade for which it was established, and which has long since overgrown its contracted capabilities. It must be visited soon after midnight, and the visitor must roam about its precincts until the hour when the great town awakes, to enable the impartial critic to form an estimate of what it is and what it is not. Honest men who have grown waggon-loads of Cauliflowers or Roses should be at least accommodated with shelter for the sale of them in the principal vegetable market of the metropolis. But at Covent Garden there is no shelter for either sellers or buyers. It is an open-air business, and the vendors pay a smart toll for the privilege of "pitching" their wares on a sloppy pavement.—(*City Press.*)

—— The example set by Clifton College in the formation of a Botanic Garden in connection with the Natural History Society is, we understand, about to be followed at Marlborough, a plot of ground having been granted by the authorities for that purpose. Such a garden will be a valuable adjunct to the herbarium, if such plants are selected as are typical of the principal natural orders, especially of those which are sparingly represented in the British flora.

—— The Seaweed or Wrack (Fucus vesiculosus), called in Brittany goëmon, is there extensively collected along the coasts for fertilising the lands, and also for fuel, which last is so scarce that even cow dung (as it is in India) is collected and dried against the walls for that use. The gathering of goëmon takes place in March and September, and employs the whole population of the district. On the appointed day for gathering the crop, horses, oxen, cows, dogs, every animal and every machine, are put into requisition. Women and children, all are assembled in the bays, sometimes to the number of 10,000; but to allow the poor to have the full advantage, the custom is, on the first day, to admit only the necessitous of the parish. It is called "The day of the poor." The fine sands of the seashore are also carted and laid on the heavy soils to improve their staple. Roscoff is the great gardening district. The whole country round is kitchen garden. They grow Onions, Cabbages, Parsnips, Asparagus, Artichokes, Cauliflowers, &c., and the gardeners will carry their produce 100 miles to market. 2,000,000 lbs. of Onions are said to be sent by them to England annually.—(*Palliser's Brittany.*)

—— Mr. Wallace, the well-known naturalist, is going to try on a large scale experiments in naturalising plants, and is very hopeful of success.

THE TEMPERATURE OF THE BRITISH ISLANDS.

In the Journal of the Scottish Meteorological Society there appears a paper under the above title, by the Secretary of the Society (Alexander Buchan, M.A.), which, on account of the instructive maps accompanying it, is full of interest. The paper contains the results of thermometrical observations made at seventy-six stations in Scotland, sixty-seven in England, twelve in Ireland, and fifteen in countries adjoining, deduced from observations made, in many cases, during a period of thirteen years (1857 to 1869). For those places at which the observations had not been made for so long a period, corrections were obtained by comparison with observations made at places adjacent, so as to reduce all to one uniform series. And from the resulting mean values isothermal lines, or lines of equal temperature, have been constructed, not only for the average of the whole year, but also for each separate month of the year. The comparison of the thirteen maps thus obtained, one with another, is most interesting and instructive, especially as showing the influence of the temperature of the Atlantic ocean on the coasts washed by its waves. On the average of the whole year, as would generally be supposed, the temperature declines as we approach the north, whilst there is little variation between the temperature of places situated on an east and west line. But when we come to examine the maps for the separate months we are met by unexpected phenomena. During the summer months the isothermal lines run nearly east and west, without any very extravagant variation—that is, it is warmer towards the south, and colder towards the north. But in the winter months this is all changed, the lines running then nearly north and south. Thus, in the months of July and August the

temperature of London is within 1° of that of the Land's End, whilst both are about 10° warmer than the Shetland Islands. In December and January, on the contrary, the temperature of London is within 1° of that of the Shetland Islands, whilst it is 5° colder than that of the Land's End. In spring and autumn the lines occupy intermediate positions, crossing the country in a diagonal direction; but interesting as it is to follow, in the successive monthly maps, the changes of position of the lines, we cannot enter into further description of their changes here. The one broad result, as already indicated, appears to be that, although during the summer warmth is to be reached principally by going south, in winter we soonest reach warmth by going in a westerly or south-westerly direction. In the month of January, for instance, it is rather warmer at Lancaster than in London, and several degrees warmer in Wales. Again, in the Isle of Skye, during the same month, it is 2° warmer than at Aberdeen, and at the Land's End 6° warmer than at Dover.

A few remarks condensed from Mr. Buchan's discussion of his results may be interesting. In referring to the powerful influence of the sea in modifying the courses of the isothermal lines in the different months of the year, he alludes to the importance of making observations on the temperature of the sea also, and mentions that such observations have for some years been made at different points round the Scottish coast. One of the best illustrations of the influence of the ocean is the high temperature of the northern islands during winter; the conserving effect of the Irish Sea and English Channel may also be traced. The mildest winter climate of Great Britain is found in the peninsula of Devon and Cornwall, a part of the country which as well as being far south and west, is more completely enveloped by the ocean than any other. The climate of the British Islands is much milder in winter and cooler in summer than in continental regions in the same latitudes, the influence of the sea being everywhere felt. In those parts of the country, however, most removed from the sea the heat in summer is relatively great. Thus, in London and the tract of country immediately to the westward of London, the temperature in summer is higher than that which prevails in the region around. Mr. Buchan discusses to some extent also the question of temperature in connection with agriculture and the maturing of crops, but we cannot here follow him further, and must refer those who desire more information to the paper itself, promising them that the maps alone will prove most interesting subjects of study.—(*Mechanics' Magazine.*)

GROUND LEVELLING AND PRACTICAL GARDEN PLOTTING.—No. 16.

DRAWING PLANS.

To draw and transfer to the ground *fig.* 39. Draw the rectangle A B C D, also the diameter lines E F and G H. Draw lines 1 2, 3 4, 5 6, 7 8. From centre o, with radius o *a*, draw arc *a*; with the same radius draw all the arcs on the circle *a*. With radius o *b* draw arc *b*, and all the arcs on the circle *b*. From centre o draw arcs c, *d*, and *e*, also the centre circle o. From point H, on line A B, draw arc *f*, meeting lines 1 2, 3 4; then draw arcs *g*, *h*, and *i*. From centre 9 draw arcs *r*, *s*, and *t*. From centre 10 draw arcs *k*, *m*, and *n*. From centre 11 draw arc *v*, also circle *u*. From centre 12 draw arc *x* and circle *u*. From point 13 draw arc *l* and circle *p*. Where the lines cross each other are the angles of the beds. Draw the other side in the same manner.

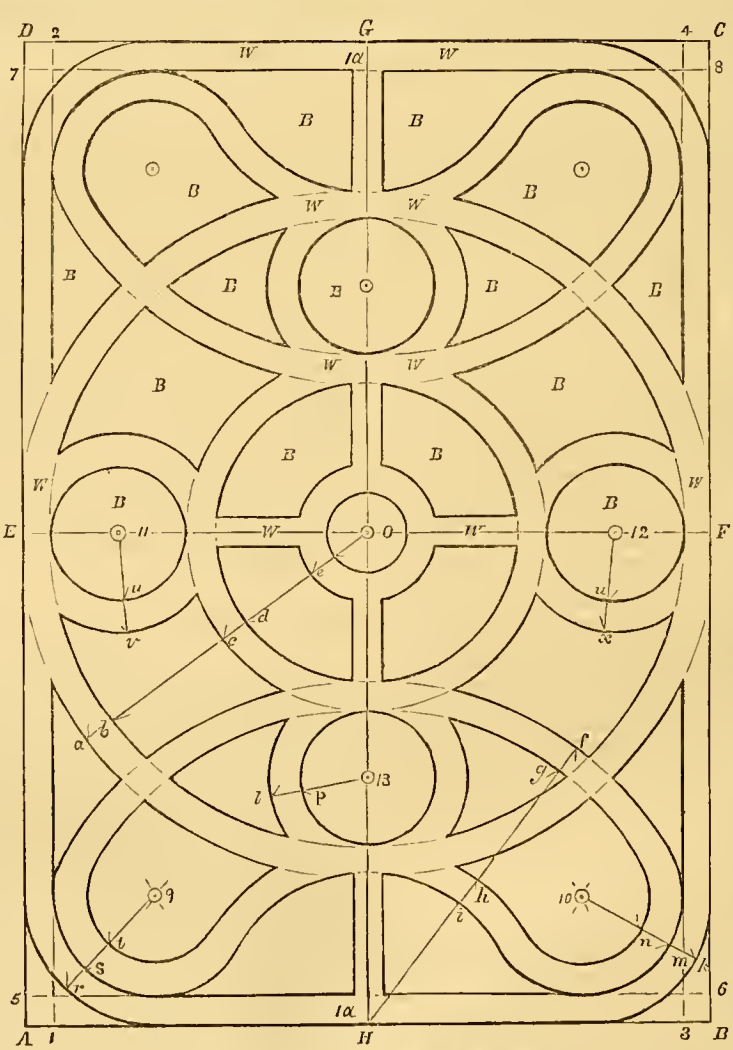


Fig. 39. Scale 16 feet to the inch.

To transfer *fig* 39 to the ground. From A to B, which is the side of the rectangle on which this design is based, is 57 feet, and from B to C, the other side, 83 feet. Find points A, B, C, D; insert a stake at each point, and lay lines connecting them. Lay diameter lines E F and G H. On each side of the stake at point A measure 2 feet 6 inches, and insert a peg at each point, as at 1 and 5. From stakes B, C, and D find points 3, 6, 4, 8, and 2, 7 respectively in the same manner; insert a peg at each point. Lay lines connecting pegs 1 and 2, 3 and 4, 5 and 6, and 7 and 8. Insert a peg at centre o. From the peg at centre o, with a string 28 feet 6 inches long, trace arc *a*, also the other arcs having the same radius. Reduce the string 2 feet 6 inches, and trace arc *b* and the other arcs having the radius o *b*. From the same peg, with a string 15 feet long, trace arc c. Reduce the string 2 feet 6 inches, and trace arc *d* and the other arcs having the same radius. From the same peg, with a string 5 feet 10 inches long, trace arc *e*. Reduce the string 2 feet 6 inches and trace the circle. From the stake at point H, on line A B, with a string 28 feet 6 inches long, trace arc *f*, as shown by radius H *f*, meeting lines 1 2, 3 4. Reduce the string 2 feet 6 inches and trace arc *g*. From the same point, with a string 15 feet long, trace arc *h*. Reduce the string 2 feet 6 inches and trace arc *i*. On each side of centre o, on line G H, measure 20 feet 9 inches; insert pegs as at point 13. With a string 8 feet 3 inches long trace arc *l*. Reduce the string 2 feet 6 inches and trace circle *p*. From the peg at point H, with a string 20 feet 9 inches in length, trace an arc at point 9. From the peg at point 13, with the same length of string, trace another arc; where the two arcs cut each other is centre 9; insert a peg at that point. From the peg at point 9, with a string 10 feet 8 inches long, trace arc *r*, meeting lines A B and A D. Reduce the string 2 feet 6 inches and trace arc *s*, meeting lines 1 2 and 5 6. Again reduce the string 2 feet 6 inches and trace arc *t*, meeting arcs *g* and *h*. From the stake at point E measure 8 feet on line E F, and insert a peg as at point 11; from the peg at point 11, with a string 8 feet long, trace arc *v*. Reduce the string 2 feet

6 inches and trace arc *u*. Find point 12 on the same line and trace arc *x* and circle *u* in the same manner. Find the corresponding points on the other side, insert pegs, and trace arcs. On each side of stakes E, F, G, H measure 15 inches, insert pegs as at points 1*a*, I*a*, and lay lines connecting them for the purpose of setting out that portion of the straight walk which is in the centre, and the design is complete.

The lines are in Box; B, beds; W, walks.—M. O'Donnell, *Gardener to E. Leeming, Esq., Spring Grove, Richmond.*

POLYANTHUS, &c., AT WIERTON.

The renewed demand for hardy spring-flowering plants has been more successful in again bringing into use those which are old and neglected than in enlisting the services of new ones. Amongst others which were favourites in former days, and which are again resuming their position, are the various members of the Primrose family; and in spite of the hard winter we have passed through they never appeared to have done better, the dense blooming of the wild ones being equalled by that of the garden varieties. The most profuse-flowering kind we have here, as well as the earliest by some weeks, is the Single White. I find on looking over a bed of shrubs, amongst which I last summer planted out some spare plants of Primula denticulata, that even these, or at all events the greater part of them, have survived the winter and are now flowering, though less effectively, than they used to do under glass. I have no doubt that the improved variety of P. cortusoides called amœna, when more plentiful, will become one of the chief ornaments of our flower borders. But much is being done in all directions with the Primulas; Auriculas of the Alpine section are sought out and propagated, and the Polyanthus affords an endless list of varieties.

Amongst those who for the last few years have been raising varieties of Polyanthus from seed, Mr. Divers, gardener to W. Moore, Esq., of Wierton, has been very successful, and I was highly pleased with his collection when I saw it this spring. There seemed to be every shade of colour into which this plant runs, and some of the varieties approached that standard of excellence which the florists of the last generation laid down as necessary to ensure distinction at an exhibition, but these Mr. Divers wisely did not regard as so useful as free-flowering varieties of more distinct colours. Some of his seedlings had flowers approaching nearer to that hue which it has been the ambition of breeders of Roses and Dahlias to attain—viz., blue, than anything of the kind I have before seen. Mauve, rosy lilac, and the various tints which contain a mixture of the desired colour were plentiful, and one or two varieties were free-flowering and of a fine habit of growth. Others, again, showed an inclination to return to the Primrose condition, while one or two partook of the Cowslip propensity of hanging the flowers mouth downwards, and were of course condemned, though interesting as showing how widely the family are likely to sport; the seed originally, I believe, being from Polyanthuses crossed with some of the Primroses. Mr. Divers has also turned his attention to breeding Alpine Auriculas, which requires more time and patience; and the process of raising seedlings and afterwards propagating them being so much slower than with the Polyanthus, it will be some time ere fine varieties for flower beds become plentiful.

Mr. Divers also pays great attention to hardy fruits, and I believe he has at times successfully exhibited at some of the metropolitan shows; at local shows he generally stands pre-eminent for long-kept Apples and Pears, often exhibiting the former eighteen months old or more; while at the time of my visit (the middle of April) he had an abundance of Winter Crassanne Pears in good condition for table, with other stewing Pears which seemed likely to keep for months. Catillac and Uvedale's St. Germain were as fresh as when taken from the tree, while amongst Apples there were still good Ribston and Fearn's Pippins, a large kind of French Rosset, and the indispensable French Crab. His place for keeping them was far from being perfect—it was an up-stairs room fully exposed to the summer sun and not at all lofty. I had not time to notice the various kinds he had in stock, but I had a look at the trees, which are ordinary standards growing in a grass orchard; the situation rather high, the soil calcareous, but highly favourable to the growth of most timber trees and many shrubs.

The pleasure grounds contained some of the neatest Yew hedges I have ever seen, and yet they are not more than from twelve to eighteen years old, which is but little in the lifetime of a Yew hedge, and some of them have been perfect for several years. Occupying part of the roof of a plant house adjoining the mansion a Vine was pointed out to me, which, although its roots were confined to a space of ground not more than 4 feet square, owing to the buildings hemming them in, yet I was told nearly a hundredweight of Grapes had often been cut from it. The house was well stocked with greenhouse plants, for which it was assigned, the Vine being a secondary matter. The subsoil, consisting of decomposed Kentish rag, has no doubt much influence on the well-being of many things, as timber trees and shrubs. Even under the shade of some lofty Beech trees I noticed some very large patches of the Narrow-leaved Variegated Vinca, some of them covering patches 5 or 6 yards wide as closely as could be wished, showing that this plant, if the soil is suitable, will grow and look well where scarcely anything else will. The walks which traversed these shrubberies, and the carriage drive, were asphalted and had been laid down many years. Some of the views were lovely, at one place a walk running along the edge of a precipice, and the valley or broken ground below being an immense orchard. At another place a sort of ravine is crossed by a rustic bridge. The principal front of the mansion is enclosed by a terrace garden bounded by a wall with a parapet, and a series of geometrical beds are laid out on grass on the east side. The carriage entrance is to the north. The whole place was in good keeping and very creditable to the proprietor, Mr. Moore, and his industrious gardener.—J. Robson.

WORK FOR THE WEEK.

KITCHEN GARDEN.

With continual surface-stirring weeds will never make their appearance amongst growing crops, but there are some parts of the garden, such as those quarters devoted to Gooseberries, Currants, and Raspberries, which, from not requiring continual surface-stirring, are apt to be neglected. The hoe should be kept constantly at work amongst these whenever the sun is powerful enough to wither the weeds as they are cut up. This is a very difficult matter in many places, because so much help is required just now in the flower department, but great exertions should be made to devote a day occasionally to this work, for a day now is worth two or three at a later season, and the weeds are prevented from seeding. The first-sown *Red Beet* must now be thinned out, and if there are any vacancies the thinnings may be successfully transplanted if they are carefully lifted, using a long dibble in replanting, and placing the roots perfectly straight in the hole. With such favourable weather as we have had there ought now to be a good breadth of *Cauliflowers* and *Cabbages*. Keep the earth well moved amongst them. Cauliflowers in a forward state must still be supplied with liquid manure, even if the ground is wet. A few trenches should now be prepared for the earliest *Celery*. In soils with a wet bottom the trenches should not be made too deep, so that the plants may be nearly on a level with the surface of the ground; a dry bottom with deeper soil may have deeper trenches; in either case give the rows a good width, because the Celery should never be earthed-up until it has nearly attained a size fit for use, and therefore the intervening spaces may be cropped with early dwarf Cabbages, Cauliflowers, and Lettuces, all of which would come off before the final earthing. Where young *Carrots* are continually in request another sowing may be made, and advancing crops of the same must be kept well surface-stirred and thinned out to from 4 to 6 inches, as very large Carrots are seldom required. The ridge for *Cucumbers*, recommended last week, will now be in a proper state to receive the plants; let them be planted without delay, and shade the glasses for a few days. At the same time a few hand-glasses may be sown with seeds of *Vegetable Marrows*, and with *Cucumbers* for succession and for Gherkins. For the latter purpose, on warm soils, seeds sown in the open border will suffice; but on colder soils it is better to forward plants in pots, have a sloping bank thrown up facing the south, plant them near the top, and train the vines downwards, stopping them occasionally. Plant out *Basil*, *Chilies*, *Capsicums*, and *Tomatoes* in light compost under a south wall, in doing which, if they are at all pot-bound, let the roots be gently loosened and spread out. Stop the early *Peas* as soon as the first blooms are well set. *Parsnips* require to be thinned to 9 inches or more apart if the ground is rich.

FRUIT GARDEN.

During the process of nailing-in the shoots of Peaches, Nec-

tarines, and Apricots, examine if there are any nails likely to injure the swelling fruit, and remove them. Those who have to nail-in young shoots should use strong cloth shreds of good texture, cut to a sufficient length to allow plenty of room for the wood to swell; it is sad to see short shreds used, and bound so closely round the wood that at the pruning season many of the shoots will be found to have an indented ring, and very often a huge piece of gum. Vines will now require constant attention in stopping and nailing-in. Do not crowd the trees with too much fruit, because it is only in favourable seasons that they ripen their fruit well, and not even then if they are crowded.

FLOWER GARDEN.

The late rains will be favourable for recently-planted shrubs, and now that the soil is damp no time should be lost in completing whatever remains on hand in the shape of planting or bedding-out young nursery stuff. If not done previously, the herbaceous ground should be well cleaned and neatly raked over. This cannot well be done sooner in consequence of many species being late in vegetating. Fill-up vacancies, either from the reserve ground or by sowing annuals in the intermediate spaces. Large plants of some genera, as Phloxes, Asters, &c., generally throw up too many flowering shoots. Where such is the case thin them out at once so as to obtain not only fine heads of bloom but increased strength to the remaining shoots to enable them to do with less assistance from stakes. Hollyhocks for late blooming may still be planted, as it is better, when they are grown extensively, to plant at two or three times to insure a succession of bloom. These showy plants are admirably adapted for planting in long lines and parallel straight walks, walls, &c., where they produce a grand effect. As the state of the soil and weather is now favourable for commencing with the bedding-out stuff, a start should be made with the half-hardy plants first, as Calceolarias, Verbenas, and similar plants, reserving the Heliotropes and the more tender kinds of Geraniums for the latest planting, when the danger from frost may be supposed over.

GREENHOUSE AND CONSERVATORY.

A good number of the plants in the conservatory, such as Diosmas, Myrtles, and other things which have done blooming, may be removed to the reserve garden, and being cut back and repotted, will, if properly attended to, make fine plants by the autumn. These old plants, and many more, are very valuable where cut flowers are required for drawing-room decoration. Plants from the greenhouse and stove will now be very plentiful to decorate this house, but trust more to good plants set thinly for producing a satisfactory effect, than to a crowd of comparatively inferior productions. Weed-out the inferior specimens and kinds in the greenhouse so as to give plenty of room to the best specimens, and let it be a rule never to allow the plants to touch during the time they are making their growth. All plants which are becoming shabby must have the old blooms removed, and, if necessary, let them be cut back and started into fresh growth. Fuchsias should now be growing rapidly, and Pelargoniums and Calceolarias should be all in bloom. Supply them liberally with weak manure water, and keep a sharp look-out for insects. Cut down and place in a cold frame the choicest Cinerarias for suckers, and put in a stock of Chrysanthemum cuttings for autumn display.

STOVE.

Afford a brisk growing temperature, with air both night and day. Take care to pot in time such plants as require a shift. Stephanotis, Schubertia, Glorioса, Allamanda, Dipladenia, and other climbers will now be showing bloom. Keep the branches from getting entangled, but do not be in a hurry to train them until the flower-buds are of considerable size. As spring-flowering plants for the stove or for cutting there is not a more useful class of plants than Begonias. Now will be a good time to commence with a stock for next season's display. As they go out of bloom allow them a short rest in a rather dry house, when they may be partially disrooted and repotted, pruning-in any straggling shoots. Keep them close and syringe frequently, when they will soon commence growing. Abundance of light and a tolerable share of pot-room are necessary to insure fine plants. Above all, keep them a good distance apart that the fine foliage of some of the species may have full room to expand. As the plants advance, liquid manure may now and then be given. Their period of blooming is from January to May. As a guide for selecting, it may be mentioned that Begonia nitida, cinnabarina, discolor, manicata, ramentacea, and Martiana are all showy and easily grown.—W. Keane.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

We encouraged growing crops by forking, hoeing, and surface-stirring, and kept up successions by small sowings. We have scarcely anything here upon which there has not been a fair run, except Leeks. A goodly lot were used for puddings, &c., but they seem at present at a discount for dishes, and yet few vegetables are better than large, mild, nicely-blanched Leeks. How it is we cannot say, but several scientific men have assured us that Leeks are as cooling for the blood as Onions are heating. Good Onions are now scarce, and even strong, long-necks of last year are useful for some purposes. We do not like to meddle with the transplanted Onions which we want to make large bulbs. The spring-sown will yield fine thinnings for soups and salads.

Our orchard house has helped us well with fine Lettuces. It is just possible we may go to extremes, but in the space of a few weeks eight gentlemen who proposed making glass cases 2 or 3 feet from walls, have altered their plans so as to make lean-to's 10 feet wide inside. Were nothing else grown in the way of fruit except on the wall trees, what a fine opportunity would the enclosed border give for growing early salads, Potatoes, dwarf Peas, and other crops. If, as many intend, we were forcing even a hundred pots of *Strawberries*, where could be a better winter standing place for them? These lean-to roofs with good walking space beneath, except, perhaps, at the very front, provided there is a wall already, can be put up for less than a frame or pit with moveable sashes. The great advantages of the cheap lean-to are—first, the benefit of the protection of the wall and the heat stored-up in it; and, secondly, the large quantity of air enclosed, which heats slowly and cools slowly. To this might be added in moderately close houses, for ours are not by any means close, the quietness of the air within during very cold weather. A keen frosty wind does far more injury than the same amount of frost with a still air. Strawberry pots that stood in such a house were not injured, even those fully exposed. Several times in the coldest nights a little straw was strewed over the surface of most of the pots, but the plants left exposed seemed as perfect as respects the rooting, as those thus slightly protected. Had these pots stood out of doors unprotected we would not have given much for them. Even when standing close together in beds out of doors, it is amazing how effectual a slight covering is. As far as we recollect, in the dread winter of 1860—61, Mr. Rivers saved numbers of plants in pots by laying the pots and the heads on the ground and covering them all over with litter. The stores of heat in the ground thus come in as our heating medium. We have frequently had plants thus covered for six weeks, and when uncovered a day or two after the thaw the plants looked just as if they had been covered for a night. In extreme cases, how easy it would be to give a slight covering under a glass roof instead of out of doors! We hope to see little glass-covered gardens even for early vegetables. After last winter we cannot say much even as to Lettuces carried through the winter, except those on wide steep ridges, which stood well and have been and are useful, but even these were protected in the most severe frost with evergreen boughs and a little dry litter. The importance of these little matters is owing to the fact, that many will luxuriate in a nice salad early in spring, who will care nothing for it early in summer and onwards, just when we should imagine that it would be most useful if not most valued. Let anything only become rather common and easily obtainable, and with many people all its attractions are gone.

As many of our enthusiastic amateurs are anxious to front their walls with sashes merely placed against them in the way of protection, we say, Do so by all means; but if we did so ourselves, instead of enclosing a foot or two, we would make the glass into a lean-to, and enclose 10 or more feet in width. The fixed lean-to with large squares would cost much less than the moveable sashes. Just think of the comfort in stormy weather of performing the necessary operations under a glass roof; and if one did not devote the enclosed ground to fruit, what a rich return could be obtained in vegetables all the spring months, and these always fresh just when wanted!

We earthed-up a lot of our most forward Potatoes, though in general we do not consider it necessary, but chiefly that thus we may obtain more room for placing Cauliflowers, &c., between them.

The cold north winds of late have tended to keep things backward that were proceeding in free growth after the rains. Some rows of forward Potatoes close to walls and fences we watered well, as little or no rain seemed to touch them. This will greatly help the tubering. To Potatoes under glass we give very little water, and we find the tubers better flavoured in consequence. The beds used for early Potatoes will, with a little turning and the addition of fermenting material, come in for late Cucumbers and Melons, &c.

FRUIT GARDEN.

Last week we noticed that the frost, not of the spring, but of the winter, had done more harm than we expected. Many little shoots of Peaches and Apricots that broke pretty well, and even set fruit, are now flagging and dying back. The heart of the shoot seems to have been injured. When pruned out, in most cases, there will be enough left. Sometimes a shoot seems injured merely in spots, others are injured half way through on one side, and others again have pieces on them seemingly dead quite through. When the latter is the case, all above them must go. When there are merely injured spots on one side, or not quite through the young shoot, the fruit above these spots will often ripen well, but it is advisable to replace these shoots with fresh ones from their bases next season.

There are many strange eccentricities in the knowledge of most old gardeners as to the small channel of sound wood necessary to keep up the requisite circulation. In our observations we have seen some of the finest and richest-coloured Ribston Pippins towards the extremities of branches that were so gnawed with canker, that in shoots 1½ inch in diameter there could not have been above from 1-16th to 1-8th of sound wood in the centre, the bark and alburnum being all gone. We once had a Nectarine tree that bore good crops for years after the main stem was all gone, except a strip half an inch wide on one side, and live wood beneath it for about 1 inch in depth. To show, however, how variable these matters are, we may state that a twelvemonth ago, in winter, we had a beautiful Walburton Admirable Peach tree which had its stem gnawed all round about 2 inches from the ground, and from 2 to 3 inches in depth, by mice. As the gnawing did not go much, if at all, beyond the last season's deposit of alburnum or fresh wood, we were under no serious apprehension on the subject; but we had the opening well filled with cow dung and clay, and bound all round with a cloth, expecting that in a couple of years at farthest, as we had often witnessed in similar cases, the bark would unite, and a fresh deposit of wood be formed. All went on well until the fruit, which we thinned more than usual, began to take the second swelling, and then, independently of shading, &c., the leaves flagged, the fruit dropped, and the shoots dried up. In this case we think that, besides the gnawing, there had been a sort of poisoning from the gnawing. There is always danger, therefore, when there is an interruption of the flow of the sap; but in this case, there being the bulk of the wood untouched, through which the sap might pass, the result was not what we expected. Why mention it, then? Just honestly to show we cannot in such cases speak or predict with certainty; all we can do is to call experience and observation to our aid. Thus, from our correspondents, we have received three different kinds of specimens of Peach shoots of last year's growth. One lot is thoroughly dried up in wood and buds. With such nothing can be done, and if the tree is all the same, the sooner it is removed the better. The second has spots about an inch long, as if burned with a hot iron, but the spots are only on the outside of the shoot, not through it. Most likely the fruit set above these spots will ripen, but we would lay in a shoot from the base, so as to get rid of these marked shoots next spring. Others have rings of these burned-like spots right through, and in such cases everything above them must die. All this we attribute partly to unripened wood, but chiefly to the severe frost of the winter. Trees, however, will go wrong at times, and the best gardening doctors will be unable to find a reason or a cause.

We turned a good many *Strawberries* out of their pots after cleaning them, removing fruit stems, &c., hoping that they will give us a good return in autumn, and an extra crop next season. To have good fruit in autumn, the sooner the plants are turned out into good soil in May the better. Some of those we turned out first are now showing bloom buds. We think we are right in attributing the comparative scarcity of bloom out of doors to the frost injuring the buds, as the Strawberry plants in pots under protection of some kind, never showed better bloom. We are glad to learn that the bloom of the Strawberry promises so well in many places. Hereabouts there is comparative scarcity. Singular things, however, do happen. We heard the other day of a fine plantation of winter-standing Cabbages, and the garden in a hollow too, just where we should have expected them to suffer. In most places, however, where the plants were at all forward, there was little left but a wreck. In the place referred to, though the Cabbages stood, not a Broccoli of any kind remained.

Thinning Grapes.—It is the best economy not to leave too many bunches, and to thin these bunches, as soon as they can well be handled, with the scissors, and there is proof that the setting is fully accomplished. When thinned early there is no necessity to touch much the berries that are left, and the less they are touched with the hand or the sides of the scissors the better. We say nothing of pricking a berry with the scissors, for, of course, that berry will crack and do no good afterwards. The points of the scissors should be kept quite clean. Those not experienced should also use a little forked stick for holding the bunch. It should be touched by the hand as little as possible, and the touching with the hair of the head ought also to be especially guarded against. If these little matters are neglected a sort of rusting on the berries is apt to ensue. The crusting and rusting, though often attributed to this cause, is frequently owing to another and quite different one, and that is

Sulphur Fumes Overhot.—We have not a doubt that many of the clouded berries, and shrivelled-up and clouded young bunches, of which several correspondents complain, are owing to warm sulphur fumes and the want of sufficient ventilation. Dauhing hot-water pipes, and even flues, with sulphur when the heat is little above 160° is one of the best means for keeping houses free of red spider. When the heat in the pipes rises to 180° and upwards, unless there be plenty of ventilation given, many things will suffer from the sulphur fumes, and Grapes, especially, when young and scarcely half the size of small peas. When they are larger the fumes have less effect. When the small berries become clouded they rarely recover; even when the berry swells there is a cloud, a rust, or encrustation that continues. Singularly, too, hardy though it be, there is no Grape that suffers so much from this cause in its young state as the Black Hamburgh. We have had bunches affected when those of Muscats, Sweetwaters, &c., were not at all touched. Whenever, therefore, under such circumstances the pipes with sulphur on them become rather warm it will be wise policy to leave a little air on the top ventilators. Altogether, in heating by hot water, it is safest, best, and most economical in every way to have plenty of piping, and not to be compelled to overheat it. We have known many cases where the saving of a couple of pounds in piping has secured an extra expense of £5 for fuel, and that or more every year. One of the most sensitive plants to sulphur fumes, even from hot-water pipes, is the Maiden-hair Fern. The fresh-formed fronds are easily destroyed. The extreme heat of hot water must therefore be guarded against.

ORNAMENTAL DEPARTMENT.

Mowing, machining, preparing beds and borders, and putting edgings in order, have formed the chief out-door work. We have commenced with Violets, dividing and planting, partly to stand and partly to lift again, as fully noticed in an article lately. All may be freely propagated by runners, either planted at once or placed under hand-lights or frames, but where plenty of plants are grown dividing is the process that involves least labour. Much time has been devoted to potting and cleaning Ferns, cleaning Azaleas done flowering, and moving them to where they could have a little heat and more sun, and the demand for more of such subjects, and less of a desire for Figs, have forced us reluctantly to take the Figs out of a low house, and devote it in the meantime to plants. For many years the Figs were a feature in the place. The plants had been turned out of pots into a pit, and, excluding drainage, never had more than 9 inches of soil, but fruited abundantly, often producing three gatherings before we stopped, though we ought to have been satisfied with two. Surface-manuring, and plenty of water which could not stagnate, were the chief sources of success. As we must get a lot of plants for corridors, now to be covered with glass, we could not well help ourselves, unless we had first had a range of preparatory houses. As a rule the preparatory houses are apt to be forgotten. Even for the palace and the mansion there must be the workshops, though unseen, and for fine conservatories there must be workshops, if the best results are to be secured all the year through. A house to bring Azaleas into is of great importance, as there is always a risk in taking them to vineries and Peach houses. A few leaves

affected with thrips may soon spread the evil, and cause much trouble. From a small Azalea plant thrips once spread to Vines, and it took us the greater part of two years to get rid of it. Though we had not seen a mealy bug for a quarter of a century, we got that on some Vines by merely placing a newly-brought-home softwooded stove plant among them. It is well to smoke Azaleas if there is the least sign of thrips, but in a house by themselves, warm water and a close atmosphere soon put an end to the insect.—R. F.

TO CORRESPONDENTS.

*** We request that no one will write privately to any of the correspondents of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By doing so they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely to The Editors of the Journal of Horticulture, &c.*, 171, *Fleet Street, London, E.C.*

N.B.—Many questions must remain unanswered until next week.

Books (*A Half-pay Sea Dog*).—"The Cottage Gardeners' Dictionary" and "Smith's Introduction to Botany," edited by Macgillivray, will qualify you to be a garden admiral.

Indian and American Seedsmen (*Glasgow*).—We do not know where you could obtain lists of them.

Seedling Pansies (*W. Gain*).—The dark purple sells are very fine The others are like many already in our borders.

Medicated Tobacco Paper (*H. T.*).—We have several similar letters testifying to the superiority of other preparations, and are obliged to decline inserting any of them.

Culture of Plants (*Monmouth*).—There is not one of the names you mention known as applied to plants.

"Who is a Cottager?" (*J Leech.*).—We might reply as lucidly as was once replied by a contemporary to the query, "Who is a lodger?" "One who lodges." So a cottager is "one who lives in a cottage." Your eighth rule ought to prevent any doubt. "Any cottager at a rental of less than £10 a-year (for house and garden), not being either a market or jobbing gardener, will be allowed to exhibit in the cottagers' class without an entrance fee." A market gardener is one who lives by selling garden produce, and a jobbing gardener is one who lives by being hired by the day or other short time to cultivate the gardens of various people; consequently, any one else living in a house for which and its garden he pays less than £10 a-year comes within your rule.

Stopping Fruit Trees (*A New Subscriber*).—The spurs are those short stubby shoots that have clusters of leaves at their points in the case of Pear trees, and much closer together in the case of Plums. On the old stumps there will be spurs as well as growing shoots; the latter are to be stopped. In thinning Apricots you should calculate the whole extent of surface covered, and allow the tree to carry a crop proportionate to the whole. There is no reason why they should be more closely together in one part than another. Thinning should commence at once, going over them two or three times, thinning partially each time. Thinning may take place at intervals of three weeks.

Harrspoot Fern not Thriving (*Kate*).—You do not inform us whether the plant is in a pot or not, but we surmise that it is in a greenhouse. If so, pot it now, removing all the old soil that can be readily taken away without injury to the roots, and place it in a pot sufficiently large to hold the rhizomes, using a compost of two parts sandy peat, one part light fibrous loam, and one part sandstone, in pieces from the size of a pea to that of a hazel nut. Good drainage is necessary. Place it in a rather shady position, keep the soil moist enough, and sprinkle it overhead occasionally, particularly in the evening.

Grapes on Vine the First Year (*J. R. G.*).—You may, if the Vine is strong, allow two bunches to remain this year, but if it is weak do not leave any. The Vine will not be injured by carrying a couple of bunches, but all depends on its health and vigour.

Vine Leaves Spotted (*E. J.*).—The keeping of the bedding plants has nothing to do with the sad appearance of the Vine leaves, though the damp in the house might. The leaves are both burned and scalded, and we presume from the same cause, the neglect of early air-giving. As you kept the bedding plants there all the winter, you must have some mode of heating. Give a little more heat at night, leave half an inch of air along the top of your house, and give more air early in the morning, so as to get rid of all confined hot vapour before the sun becomes powerful. It is the early air, and not the quantity, on which you must depend; opening a door, or pulling down a sash freely when the house was steaming with hot vapour, would only increase the evil. All sudden changes must be avoided. Some amateurs that we know, who liked their beds too well in the morning to be first-rate gardeners, saved, at length, their Vines and other pet plants from scalding by simply leaving a little air on at the highest point of the roof all night.

Some Vine Buds Breaking too Early (*A Subscriber*).—In such a case, if we wished the bulk of the latent buds on the Vines to start fairly, we would have rubbed off the few that started prematurely in November, as these, if allowed to take the lead, would most likely prevent the rest starting at all. Of course, we do not know what caused the Vines to start a few buds thus unexpectedly, and circumstances would greatly regulate our decision.

Vine Leaves Small (*D M. Blackman*).—We should say that under the circumstances the Vine is naturally weak and unhealthy. Such things will happen, and they are just as inexplicable as the fact that of children of the same parents, some are sickly and puny, and others healthy and robust. The puny child must be nurtured, if possible, into robustness, but when a plant defies the efforts of years, it is generally best to get rid of it and try another.

Oyster Shells for Vine Soil (*J. M.*).—Oyster shells are very well; partly burned they help to keep the ground open, and so they do in their natural state. On the whole we should prefer to them old brick and mortar rubbish. We should not object to use them, but we think they have been too much lauded.

Greenhouse and Vinery Communicating (*W. Roberts*).—As your ground suits, you can hardly better your arrangement, only that your span-roofed greenhouse in front will shade your vinery a little, but not so much, as the span-roof will be all glass. The position of your boiler is good, and we certainly would divide the vinery into two, and heat each separately. A flow and return carried across the vinery at the division will enable you by means of a throttle valve to let heat in, or keep it off the greenhouse at pleasure. The late and early vinery will answer well, though with the same incline of roof. An angle of 45° will do well for both where there is little or no front glass, but where there is front glass of 3 or 4 or more feet, the roof glass may be much flatter. The position of your boiler could not be improved.

Auriculas, Polyanthuses, and Chrysanthemums (*Sunny*).—Every particular you ask for, and much more, is in "Florists' Flowers," which you can have from our office if you enclose five postage stamps with your address. The details are too long for publication in our correspondence columns.

Madame Vaucher Pelargonium Weak (*W. F.*).—The weak flowering is no doubt due to want of support. Young plants, as a rule, produce larger flowers than old plants, but are not so free in flowering. Repot them, and give a compost of turfy loam two parts, one part leaf soil or old manure, and one-sixth of sharp sand. When the plants have taken freely to the fresh soil, as you may know by the growth, water alternately with weak liquid manure, give plenty of air, and afford abundance of light.

Plants not Flowering (*F. G.*).—*Philesia buxifolia* requires to be kept moist, and when growing very moist. It should have a cool house, with plenty of air and light. A compost of equal parts of peat and loam suits it. In sheltered positions it is hardy. The plants require to be strong before they flower, and starving a plant to flower we do not commend; but determine the potting by the state of the roots, keeping the plants under rather than over-potted. *Fuchsia spectabilis* will now be growing freely, and should be shaken out of the pot and repotted, putting the plants into a size just sufficient to contain the roots comfortably; keep them rather close and shaded for a few days, and then afford a light airy position, shifting them into a larger pot by the middle of June. It ought to flower at the end of summer. *Fuchsia macrantha* should be kept at rest up to July, and then be repotted; only we should cut it back and not pot until the new shoots are a few inches long, repot it in September, and keep it growing during the winter in a temperature of 45°. *Desfontainia spinosa* requires a cool house, and a compost of two parts loam and one part peat, with good drainage, and to be kept moist when growing. The potting should only be moderate. It flowers freely with us in a cool house. *Bignonia jasminoides splendens* requires to be planted out in a greenhouse or conservatory border, and with patience—for it takes some time to establish itself—it is very ornamental. It does little good as a pot plant. *Pæonia corallina*, we presume you have planted out in the garden in a compost of sandy loam. The situation should be open, and it should have a top-dressing of decayed leaves in autumn. We do not know that it requires any particular treatment to induce flowering. *Rhododendron Nuttalli* requires a cold house, should be well supplied with water, and must have every encouragement to make vigorous growth; then keep it airy and cool—indeed, it can never have too much air. The potting should be moderate.

Apple-tree Leaves Withering (*A Constant Reader*).—The leaves of the Apple appear to have been wetted with some compound, which may have been too strong, and so have destroyed the tissues, otherwise we are unable to account for their falling. We think the insect enclosed is the caterpillar of the small Ermine Apple moth (Yponomenta malivorella), which devours the leaves in spring and early summer. The only remedy is to destroy the caterpillars, which you may do by hand-picking. You will find them in the folded leaves, and at night you may take them feeding, examining the trees with a lantern. A solution of 2 ozs. of soft soap to the gallon of water will also destroy them, the foliage being made quite wet with the solution.

Utilising Bones (*E. B.*).—Employing in the garden the bones from the house is a good idea. If this were done at every establishment, and their application to the kitchen garden were judicious, finer vegetables would follow. The bones would be best made into superphosphate, for which purpose they should be broken or bruised with a hammer on a hard substance so as to make them lie close together, and they cannot be made too small. For dissolving the bones you will need sulphuric acid (oil of vitriol), and of that not more than half nor less than one-third the weight of the bones, or for five stones of bones three of vitriol. The bones must first be sprinkled with water equal to one-half the weight of the acid to be used, and pour over them the sulphuric acid. When dissolved, which will depend on the quantity of sulphuric acid used, they may be mixed with fine ashes, which we consider the best mode of application to kitchen-garden ground. The superphosphate may be applied to every description of vegetable crop. Eight bushels of dissolved bones with the acid in proportion are a sufficient dressing for an acre of ground. Mixed with ashes or soil, this manure should be spread on the surface previous to sowing or planting, just pointing the ground over with a fork after the application, and so as to mix it with the soil. The dissolved bones may also be diluted with fifty times the weight of the acid employed, calculating a gallon of water to weigh 10 lbs. This liquid may be poured between the rows of all vegetable crops, especially Peas, Cauliflowers, all the Cabbage tribe, Strawberries, Asparagus, &c.

Melons in Pots (*G. C.*).—You can grow Melons in pots successfully in the pit house you specify. A good size is from 15 to 18 inches, though we have had good fruit from a 12-inch pot. Sweet loam, rather stiff than sandy, will answer best, and use little manure, and that sweet and rotten. We would rather depend on manure waterings when the fruit is set. In addition to the white-foliaged plants you name, Cineraria maritima is good either from cuttings or the second year from seeds. Arabis albida variegata is also good as a low plant. Stachys lanata and Gnaphalium margaritaceum are good as rough hardy plants. One of the sweetest variegated plants—white, yellowish, and green—is Polemonium cæruleum variegatum. The leaves are light and feathery, and stand long when cut if placed in water.

Blight on Currant Trees (*S. F.*).—We have been making inquiries

amongst the Kentish fruit-growers about the disease of which you speak, and we find that it is not unusual there, but not so prevalent this season as in some former years. It would appear to be caused by those sudden changes of temperature we have been subject to this spring, acting upon such trees as are least likely to endure them, and in 1869 the Black Currants were much affected. In local phrase it is simply termed "the blight," and is, we believe, the result of a sudden stagnation of the growing powers of the plant, caused by unfavourable weather; and this affecting certain plants more than others, accounts for its attacks being somewhat capricious, as even parts of plants are affected, the remainder escaping. We have the same thing in Apricots, and paralytic affections in animals afford a similar example. We are not aware of any remedy; the only preventive is good cultivation, keeping such disease at bay.

Larches Dying on Thin Moory Soil (*A. B.*).—We fear there is no remedy for the evil of which you complain, excepting a heavy top-dressing of soil of another description, and as that may be inconvenient, we would recommend you to pay more attention to the Scotch Firs, which are better adapted for such a soil, and are certainly longer-lived trees, excepting where affected with smoke. If it be necessary to plant other trees on the site of those dying off, you might try Birch, as they and Scotch Firs are most suitable; but you may make it available for trees of other kinds by adding to it large quantities of soil of a more loamy character after removing or breaking up the hard gravelly bottom. Except for some special purpose, this can hardly be done to a large breadth of land. This, however, being a pounds-shillings-and-pence affair, you will be best able on the spot to say how far it can be done. Certainly a more satisfactory growth will take place afterwards.

Water Cresses in Garden Border (*T. C.*).—In our No. 526, published on the 27th of April, there are full directions for their culture.

Edgings for Cloth of Gold and Lady Cullum Geraniums (*Thesaurus*).—For a bed of Cloth of Gold we would prefer a border of Purple King Verbena, or of Iresine Lindenii. With Lady Cullum a bright blue Lobelia would look well. We have also seen a border of Iresine Herbstii set it off to great advantage when the Iresine was pinched and kept low, and large leaves encouraged.

Cucumbers not Swelling (*W. B.*).—"The plants are healthy and strong, growing in a pit over a heated chamber, but scarcely any of the female flowers have the parts of fructification perfect, and out of about 150 flowers only four have swelled their fruit." We are at a loss to advise you, as you have given up syringing, emptied the evaporating pans, and given abundance of air. If we could add anything, it would be, Lessen the bottom heat. There may be an excess of vigour, as the male flowers are all perfect. We have had Cucumbers that were too strong to show or swell fruit freely, but fruited very freely when they had less liberal treatment and the flush of vigour was past. There are vast differences in the Cucumber as to fertility. We have grown some fine sorts, beautiful to look at, and which would do pretty well with a 20-feet rafter to ramble over, but which would fruit so sparingly on one of 6 feet, that they would be of little use where Cucumbers must be cut pretty well as freely as Cabbages. As the Cucumbers in the next pit fruit so freely, it is just possible that the kind that comparatively fails is less fruitful, or requires more room to attain a free-bearing state. The remedy in such a case would be to adopt the kind that does so well. In closely examining the two fruits and the flowers at the ends of them, in one the stigmas are wholly wanting; in the other, though not perfect, still they are not wanting. We are inclined to think the above are more the reasons for deficient fruitfulness than the imperfection of the reproductive organs, as, though no seed will be obtained, the Cucumber in general will swell more regularly, even when not fertilised. We have even, as an experiment, nipped off female blossoms long before they opened, and yet the fruit swelled and lengthened.

Thrips on Cucumbers (*S. H. R. J. P.*).—The only safe remedy is to fumigate with tobacco, shutting up the frame and densely filling it with smoke. Fumigate on a calm evening, when the foliage is dry. Cover the glass with mats to keep in the smoke. It is well to preserve a moist atmosphere; it helps to keep down thrips and red spider, but it will not destroy them once they secure a hold on the plants. Be careful of the soft soap solution. We have known it, when of the strength named, destroy both Cucumber and Melon foliage.

Insects (*W. L.*).—The insect which you have sent is the common Staphylinus (Creophilus) maxillosus, which feeds on worms and other soft-bodied insects, and ought not to be destroyed in your frames. (*Hermit*).—The pretty Weevils found on your Apple trees are the Polydrusus Mali. They possibly feed on the young buds and leaves, but we do not think they roll them up in order to deposit their eggs there. (*G. S.*).—The small brown objects on the Pear leaf are the moveable cases made by the larvæ of a small moth, Coleophora Hemerobiella. Although they render the leaves unsightly, it is very rare that they are sufficiently numerous to be injurious.—I. O. W.

Names of Plants (*A Constant Subscriber*).—The tree with leaves downy beneath and white-blossomed is the Pyrus Aria, White Beam tree, and apparently the variety obtusifolia. (*F. E. P.*).—Brunfelsia latifolia, otherwise Franciscea latifolia. (*C. M.*).—1, Prunus Padus; 2, Berberis Darwinii. (*A. R.*).—Calceolaria Fothergillii. (*F. A. C.*).—1, Arbutus Andrachne; 2, Staphylea pinnata, the Bladder-nut; 3, Amelanchier canadensis. (*Heron*).—1 and 3, monstrous states of Polystichum angulare; No. 1 appears to be near the form known as tenue; No. 3 to angustifrons; 2 is a monstrous state of the Lady Fern, Athyrium Filix-fœmina, near the form called Stansfieldii. (*E. L. J.*).—Blechnum corcovadense. (*G. W. L.*).—We cannot name plants from their leaves only.

POULTRY, BEE, AND PIGEON CHRONICLE.

REARING DORKING CHICKENS.

I have always been most fortunate in raising Dorking chickens, having lost but one chick in two years. My plan is as soon as their feathers are dry to give them a peppercorn, and for the first day or so feed them upon dry bread crumbs and hard-boiled egg chopped fine, sprinkled with a little black pepper, which warms their crops; a few days afterwards I moisten the bread crumbs with beer in the morning, and when they are a week old I give them ground oats slacked with beer, and occasionally greasy water or gravy, with a little meat or suet chopped fine, varying their meals with a few groats. I put a board under the coop at night to keep the chickens dry, and they have the run of the field all day. If "O. P. Q." would like to try my method of raising Dorking chickens, I think he would not lose so many. The milk, I think, is apt to scour young poultry.—S. S.

HATCHING DISASTERS

Almost all my correspondents have been asking me this spring if I did not find it a terribly bad hatching season. I certainly have known better, the raw east winds having caused an unusual number of chicks to die in the shells at from a week to a fortnight old, and hens have been remarkably late both in laying and sitting; but with one exception I have not found matters so very bad as very many have evidently done. That exception is in several respects so singular that it may be worth relating.

As I cannot afford to set my own birds till late in the season, I buy nearly all my broody hens, and very rarely have any trouble with them. I bought two very early in March, and set them the same day on ten eggs each, one of them being a common speckled hen with a top-knot, the other apparently a very small Dorking crossed with Game. They both behaved quietly enough for awhile, and having at the end of a week found and removed one sterile egg from one nest, and two from the other, I expected two good broods. I should say the two birds were sitting side by side, and appeared as friendly as possible. All, in fact, seemed to go well till a fortnight had elapsed, when the Dorking broke an egg, and two days afterwards another. From that time she broke no more, but I found the other hen minus an egg every day, not a vestige being left in the nest, so that I began to blame the rats, and became anxious for the result. Two days before hatching the Dorking became very restless, flying off the nest on my approach, and leaving her eggs till nearly cold, which rather surprised me; and on Saturday morning, the chicks being due the same night, one went off for good, though her eggs were beginning to chip, leaving one chick actually hatched, but wet and nearly dead, in the nest. The other hen had now only five eggs left, three of which were hatched, and one breaking the shell. I took the Dorking's chick into the house by the fire, and on my return found her in front of the other nest, eating the partly-hatched chick which she had drawn from under the other hen, and thus accounting for the mysterious disappearances of the last few days.

I soon sent the cannibal hen "off the premises," and felt in despair, the other hen being too small to cover all the eggs, and her own chicks being also nearly dead from the fuss, and needing her quiet nursing much. I had had three of my own hens broody a few days, but they had been penned till the fit was nearly over; still it was the only chance, and I took the best of them and put her on the Dorking's eggs, now nearly cold. It would not do; she would not take to the nest, though she clucked and appeared broody again. The eight eggs were now as cold as they could be; but, mindful of past experiences, I took some warm water and put them in whilst I made a new nest for my hen in her own accustomed place. After about a quarter of an hour she settled down, and, with reviving hopes, I went to look at the eggs in the basin of water, which I had made fully 105°. To my surprise I found six of them now evidently alive, the heat having revived them, and they were at once given to the fresh hen, a very large bird, with good hope of success. The first she hatched was crushed to death, being very weakly, and the next three I therefore took away. The other two had not strength to break the shell, and I therefore assisted them out, keeping them in warm water till extrication was completed, in order to prevent tearing and loss of blood. One of them, in fact, was so nearly dead it did not even chirp, but lay down in the flannel nearly cold, and remained so some hours (being kept by the fire of course), but revived a little towards evening.

I had now done with the large hen. My heart smote me for depriving her of the pleasures of maternity after she had served my turn so well, but she was so heavy I dared not trust the weakly chicks with her, and turned her off. The speckled hen had in the meantime hatched her remaining egg, and having fed her well to insure her keeping quiet, I finally, on

Mondsy afternoon, gave her all the nine chicks, which represented the salvage of the two broods. One I fully expected to find dead next morning, but, on the contrary, they all did well, and appear nothing the worse for the trials they have gone through.

This case is remarkable, not only for the unnatural appetite the Dorking had evidently acquired for "chicken in the shell," but for the strong vitality of the eggs at so late a period. They were stone cold, and this occurring on the last day has usually been regarded as fatal. My own hopes were not very strong, and I attribute the measure of success to the use of hot water, which I had proved before to be of great efficacy after a long chill. It is the possibility of the hint being useful to some other amateur, who may be tempted to despair in similar circumstances, that leads me to give this history of my most unlucky hatch this season.—L. WRIGHT.

GREAT HARWOOD SHOW.

I HAD decided to let this matter drop, but the charges Mr. Hewitt makes in your Journal affect my position in society to such an extent, I cannot let them pass in silence. He says, "Mr. Ashworth, I find, was introduced to me by the Secretary, as the gentleman who would go round with me whilst arbitrating." I beg to say that I never exchanged a single word with the Secretary the whole day; therefore, could not be the gentleman introduced to Mr. Hewitt. I never personally exchanged a word with Mr. Hewitt in the whole course of my lifetime; therefore, I must be a perfect stranger as he says. Secondly, My Blue Dragoons being Yellows when judged, I can only say that our cleverest and best of men are liable to make mistakes; they certainly were Blues.—JOHN ASHWORTH, *Scotland Place, Blackburn.*

ACCRINGTON POULTRY SHOW.

THIS Society's annual Exhibition of poultry, Pigeons, and Rabbits was held on the 11th inst.

Single *Game* cocks stood the first on the list. A five-guineas cup was offered as a first prize, and the second and third prizes were also good. This was a splendid class of twenty-two entries. The three prizes were taken by Brown Reds; the first went to a fine bird with long snake-like head, hard and close in feather, but a little too light in breast to be perfect. The second-prize bird was a fine-coloured cockerel, a good bird throughout, and another year he will greatly improve, being a little too stilty at present. The third prize went to a capital bird in all points, scarcely inferior to that which won the first prize. There were some excellent Black Reds left out from want of prizes; amongst the most noticeable we may mention a remarkably fine bird exhibited by Mr. Chaloner, a model in shape, style, and colour, though rather short in head, but a thorough contrast to many of the Brown Reds, whose chief characteristics are flat sides, drooping wings, and long crooked legs, with the only redeeming accompaniment of long heads and fine whip tails. Such birds are, happily, now going out of fashion, and giving place to the true type of a Game fowl. In the other classes for Game were some good birds, noticeably the first-prize Duckwings and the prize Brown Reds.

Dorkings were a moderate lot, but at this season few are in show condition. *Cochins* were fine; the prizes we thought judiciously awarded. The first-prize Buffs were a splendid pair; the second-prize birds were of the most lovely lemon buff colour we ever remember to have seen. Mr. Sichel's celebrated hen looked to us on her last legs, being very ill. The first-prize Whites were a magnificent pair. *Spanish* were very good, more especially the prize birds; and one pen from Bristol (484) was put in for sale at the moderate price of £3 10*s*, at which figure they soon found a claimant. We fancy they will be heard of again before long. *Brahmas* were good, most of the cracks competing; the first prize, however, was clearly ahead of all the others. *Hamburghs* were good, but not so numerous as we are accustomed to find at a Lancashire show; it cannot be that these birds are scarcer than formerly in this part of the country. Can it be that the pace has become so hot that many exhibitors have dropped out of the race? In Golden-pencilled the competition between the first two pens was very severe, the quality of the pens being very evenly balanced. The first-prize pen in this class took the cup for the best pen of Hamburghs. Silver-pencilled were a good class. In Golden-spangled there was nothing remarkable, except the first-prize pen, but Silver-spangled were a good lot. The first-prize cock we remember to have seen repeatedly in the same position; in fact, we believe it is difficult to place him in any other, but his turn will come by-and-by to fall into the rear. Black Hamburghs were good. *French* fowls were few, but very choice; the first-prize birds were very large. *Polands* formed a beautiful class, the first prize going to Golden, the hen a wonder; second and third to first-class Silvers. In the Variety class a pretty pair of Sultans were first; second came a pair of single-combed Spangled birds, called Anconas, a sort of Spanish cross, and third Malays. Single Game *Bantam* cocks, for which a £5 5*s*. cup was offered as first prize, with £2 for the second prize, and £1 for the third, brought a fine array of twenty-three birds from the most noted exhibitors in the kingdom. All the prizes were awarded to Black Reds; the first, belonging to Mr. J. R. Robinson, was a very nice bird indeed, good in points, but in rather indifferent condition. The second and third were also good birds, admirably shown. In this class an exhibitor endeavoured to steal a march on his competitors, but his device found speedy and well-merited punishment; we allude to the disqualification of pen No. 581, exhibited by Frank Steel, of Marsden Hall, Burnley. The bird was found to have had many of his feathers artistically shortened with a pair of scissors with a view to improve the appearance of the tail. We hope this lesson may prove serviceable in deterring exhibitors from repeating such practices, for a prize obtained by such means is nothing less than depriving another of what is his legitimate right, in addition to misleading intending purchasers. In the other classes of Game Bantams were some very good birds. In the open class Brown Reds, good in style but faulty in colour, were first, Piles second, and Duckwings third. In the Variety class of Bantams except Game, the first were pretty Pekins, second Blacks, and third a quaint pair of Japanese.

The classes of *Turkeys*, *Geese*, and *Ducks* contained large and good specimens.

The *Pigeons* formed a fine collection, most of the standard varieties being represented, but the classification was not good. Carriers and Ponters were shown in pairs instead of as single birds; while Tumblers and Owls had also only one class allotted to each, and the usual "Any other variety" class was altogether omitted. The entries were numerous, but with proper division, no doubt, double the number would have been obtained, and would have added much to the interest of the Show. We understand, however, that Mr. Holden, the courteous Hon. Sec. of the Society, contemplates a much-extended prize list for next year, consequent on the great success of the present gathering. The Carriers, Pouters, Tumblers, Barbs, and Owls were good. Dragoons were a mixed and uneven lot.

There was an excellent show of *Rabbits*.

GAME.—*Black or Brown Reds.*—1, C. W. Brierley. 2, W. Boyes. 3, C. Chaloner. *c*, T. Statter, jun., Stand Hill, Whitefield. *Hen.*—1, C. W. Brierley. 2, B. Bee, Goosnargh, Preston. 3, J. Poole, Ulverston. *hc*, C. W. Briarley; Master W. Fletcher; J. Smith, Accrington. *Any other Variety.*—1, C. Chaloner. 2, Master W. Fletcher. 3, W. Boyes. *Hen.*—1 and 2, C. W. Brierley. 3, Barker and Charnock, Hlingworth Moor (Duckwing). *Any Colour.—Cock.*—1, C. W. Brierley, Middleton. 2, Master W. Fletcher, Stoneclough. 3, H. M. Julian, Hull. *hc*, C. Chaloner, Whitwell, Chesterfield; W. Boyes. *Local.—Cock.*—1 and 2, Morris & Wood, Accrington. 3, Eastwood & Hingle, Accrington.

DORKINGS.—1, D. Gellatly, Meigle. 2, J. White, Warlaby. 3, D. Parsons, Cuerden, Preston. *hc*, J. Stott, Rochdale.

COCHIN.—*Buff or Cinnamon.*—1 and 3, W. A. Taylor, Manchester. 2, T. Stretch, Ormskirk. *hc*, J. G. Broxup, Burnley (2); J. Sichel. *Any other Variety.*—1, J. Sichel, Timperley (White). 2, T. Stretch (Partridge). 3, E. Leech, Rochdale.

SPANISH (Black).—1 and 2, C. W. Brierley. 3, J. J. Booth. *hc*, G. Tonkin; H. Wilkinson, Earby; W. Wilson.

BRAHMAS.—1, J. H. Pickles, Southport. 2, J. Ashworth, Rochdale. 3, H. Beldon, Goitstock *hc*, J. Watts, King's Heath, Birmingham.

HAMBURGHS.—*Golden-pencilled.*—1 and Cup, H. Pickles, jun. 2, H. Beldon. 3, W. R. Park. *Silver-pencilled.*—1, H. Beldon. 2, H. Pickles, Earby. 3, W. M. Mann, Kendal. *Golden-spangled.*—1, H. Beldon. 2, T. W. Walker, jun., Denton. 3, E. T. Gardom, Butterton Park, Newcastle, Staffordshire. *Silver-spangled.*—1, H. Beldon. 2 and 3, J. Fielding, Newchurch. *hc*, J. Cronshaw, Accrington. *Black.*—1, C. Sedgwick. 2, D. Lord, Stacksteads. 3, N. Marlor, Denton.

FRENCH FOWL (Any variety).—1, H. Beldon. 2, J. Sichel (Crève-Cœur). 3, W. R. Park, Melrose (Creve-Cœur).

POLANDS.—1 and 2, H. Beldon. 3, T. Waddington, Blackburn. *hc*, T. Dean.

ANY OTHER VARIETY.—1, R. Loft, Woodmansey, Beverley (White Sultans). 2, J. Kitchen, Blackburn. 3, Rev. A. G. Brooks, Shrawardine (Malay).

SELLING CLASS (Any variety).—1, J. J. Booth, Silsden. 2, H. Frankland, Church. 3, J. Leemiug, Accrington.

GAME BANTAMS.—*Cock.*—1, J. R. Robinson, Sunderland. 2, T. Sharplas. 3, J. Blamires. *hc*, G. Lodd; W. F. Entwisle, Westfield, Cleckheaton; T. Sharples, Rawtenstall. *c*, G. Maples, jun. *Local.—Cock.*—1 and 3, G. Anderton, Accrington. 2, A. Hargreaves. *Black Reds.*—1, J. W. Morris. 2, F. Steel. 3, J. Croaland, jun., Wakefield. *hc*, W. F. Entwisle; Bellingham & Gill, Burnley. *Any other Colour.*—1, W. F. Entwisle. 2, T. Aspden, Accrington (Piles). 3, W. Adams, Ipswich. *hc*, E. Pickup, Lumb, Newchurch.

BANTAMS (Any variety except Game).—1, H. Beldon. 2, S. & R. Ashton, Mottram. 3, J. H. Pickles. *hc*, J. Walker, Halifax; H. Pickles, jun.

TURKEYS.—1, E. Leech. 2, J. Houlker, Blackburn. 3, E. A. Bennett, Burnley.

GEESE.—1, E. Leech. 2, T. Statter, jun. 3, S. H. Stott. *c*, J. Houlker.

DUCKS. *Aylesbury.*—1, E. Leech. 2, S. H. Stott. 3, J. Smith. *Rouen.*—1, E. Leech. 2, J. Scotson, Lowton. 3, R. Pickles. *Any other Variety.*—1 and 2, C. W. Brierley. 3, H. B. Smith (Shelldrakes). *hc*, S. H. Stott; S. & R. Ashton.

LOCAL CLASS (Any variety except Game and Game Bantams).—1, T. Holt. 2, H. Frankland. 3, Morris & Wood.

PIGEONS.

CARRIERS.—1, J. Stanley. 2, H. Yardley, Birmingham. *hc*, B. Consterdine, Littleborough; T. Waddington.

TUMBLERS.—1 and 2, J. Ford, London. *hc*, F. Moore, Burnley; W. Harvey.

BARBS.—1, H. Yardley. 2, H. Carwood. *hc*, J. Stanley; T. Waddington.

OWLS.—1, W. Harvey, Sheffield. 2, H. Yardley. *hc*, T. Waddington.

POUTERS OR CROPPERS.—1, W. Harvey. 2 and *hc*, T. Waddington.

FANTAILS.—1, H. Yardley. 2, W. H. Tomlinson, Newark. *hc*, W. Harvey.

TURBITS.—1, T. Waddington. 2, B. Consterdine.

DRAGOONS.—1, P. Unsworth, Lowton. 2, H. Yardley. *hc*, A. Ashton, Middleton; T. Waddington; W. Dugdale, Burnley; T. Charnley.

THUMPETERS.—1, J. Cundale, Copt Hewick, Ripon. 2, W. Harvey. *hc*, T. Waddington; P. Unsworth.

JACOBINS.—1 and 2, T. Waddington. *hc*, J. Stanley; F. Moore.

NUNS.—1, J. B. Bowden, Blackburn. 2, H. Yardley. *hc*, H. Yardley; T. Waddington.

ANTWARPS.—1 and 2, R. Brierley. *hc*, F. Woodhouse; J. Crosland, jun.; J. Stanley; J. Cundale; J. Wright.

MAGPIES.—1 and 2, W. Kitchen. *hc*, H. Yardley.

RABBITS.

SPANISH.—1 and 2, C. Gravel, jun., Thorne. *hc*, J. Irving, Blackburn; H. Creeke.

ANGORA.—1, M. S. Greenwood, Hebden Bridge. 2, J. Butterworth, Rochdale. *hc*, J. Boyle, jun., Blackburn.

HIMALAYAN.—1, W. H. Tomlinson. 2, J. Butterworth. *hc*, J. Schofield, Rochdale.

SILVER-GREY.—1, M. S. Greenwood, Haslingden. 2, J. Boyle, jun. *hc*, G. T. Hardman.

ANY VARIETY.—1, W. Higham, Middleton. 2, E. Vaughan, Birmingham.

JUDGES.—*Poultry*: Mr. Richard Teebay, Preston, and Mr. W. B.

Tegetmeier, Finchley. *Pigeons:* Mr. T. J. Charlton, Bradford. *Rabbits:* Mr. R. Teebay, and Mr. T. J. Charlton.

NEW ENGLAND POULTRY DOINGS.

In one of your November numbers I noticed something from Mr. L. Wright in relation to the New York State Poultry Society, and it may not be uninteresting to your readers to know that New England is not behind other sections of the country in her endeavours to bring poultry more prominently before the public. We have a very flourishing club in this state of Massachusetts (the New England Poultry Club), which numbers now some 250 members. We organised in 1865, and have just held our seventh annual exhibition. Our entries average about four hundred to five hundred pens, and we give cash prizes, although not large ones at present. We hope, however, to increase them as we grow stronger. We have a guarantee fund of some 400 dollars, are free from any debt, and have never made an assessment on our members. At our recent show we had probably the best collection of birds ever brought together in this country. The Asiatics were so acknowledged by all the breeders present, and so close was the competition, that the Judges were unable to make their awards after summing-up points for two whole days, and were then obliged to call in an additional Judge to assist them. The stock from the yards of Messrs. Boyle, Baily, Beldon, and others so familiar in your English shows were well represented by fine specimens, and received their respective awards.

We confine ourselves to poultry and Pigeons, and receive no outside attractions for the purpose of drawing a large crowd, our object being to perfect poultry and extend a knowledge of it, and its utility among the masses.—H. Woodward, *late Treasurer of New England Poultry Club.*

ACTION FOR THE LOSS OF A PIGEON.

While *v.* Jennison.—The plaintiff, Mr. James F. While, of Birmingham, brought an action in the Manchester County Court, against Messrs. Jennison, the proprietors of Belle Vue Gardens, to recover £18, the value of a Black cock Carrier Pigeon, which had been lost or stolen while in the charge of the defendants.

The plaintiff's Pigeon obtained the first prize at the Manchester Poultry Show in December. Other Pigeons belonging to the plaintiff were returned after the Exhibition had closed, but the first-prize bird was lost, and Messrs. Jennison seemed to have come to the conclusion that it had been stolen. The defendants alleged that they were not liable, because one of the rules of the Show set forth that all damage arising from accident, delay, fire, or other causes must be borne by the exhibitors, the whole of the stock being at their risk after being delivered to the Secretary or the servants of Messrs. Jennison. The defendants said they could not have taken greater care than they did; but it was alleged if they had exercised the same precautions that were observed at the Birmingham Show, the Pigeon could not have been lost or stolen. In reply to the Judge, it was stated that 7*s.* 6*d.* was paid by the plaintiff as the entrance fee for each Pigeon, but no part of that money was intended to reward the defendants for taking care of the birds. For the defendants it was urged that they were in the position of bailees without reward. The Judge said unless the plaintiff could show that Messrs. Jennison did not exercise ordinary and reasonable care they would not be liable. The plaintiff was non-suited.

[There can be no doubt that the decision was correct. It was adjudged long since in the case of *Doorman* v. *Jenkins*, that if an article was deposited by A with B, for the sole benefit of A, and without any reward to B, and the article was lost without any gross negligence on the part of B, he was not liable for the loss. Whether there was such negligence is always a question to be decided by the jury, or, in the County Court, by the Judge, if a jury is not employed.—Eds.]

Rabbits.—Seventy years ago some domestic Rabbits were introduced upon Sable Island, a small sandy islet lying about a hundred miles off the Nova Scotia coast, and being left alone and not crossed in breeding, they have entered their feral state in liveries of beautiful silver-grey, with white collars, intimating some remote affinities with bygone races.—(*Nature.*)

THE FIRST HONEY DAYS OF 1871.

After a long and severe winter the month of March arrived, bringing with it a pretty bright sky, but cold easterly winds and frosty nights prevented the secretion of honey in flowers. April brought with it a dark murky misty atmosphere, and rain almost every day. The spring months of this year have been very unfavourable for honey gathering. The flowers of gooseberry, plum, and pear trees have been abundant; but owing to the inclement weather they were not much visited by bees; indeed bees in this neighbourhood did little work out of doors till May 8th, when the weather became propitious. The sycamores being in full bloom are yielding honey in considerable quantity. Two of our best hives were weighed on Saturday morning, one was 33 lbs., the other 36 lbs. To day (May 8th) they have been weighed again, and found to have gained 17 lbs. —*i.e.*, one 9 lbs., the other more than 8 lbs., say 3 lbs. per hive per day. Though late in coming, these honey days have been gratefully welcomed. A few more of such days will make our hives heavy, and enable many of them to send off swarms in May.—A. Pettigrew.

HERMAPHRODITE BEES.

The opinions of Professor Siebold on hermaphrodite bees are the same as I have myself arrived at. The degree of intermixture of sex is often very small, such as one of the antennæ, legs, or eyes being of a sex opposite to that of the bee generally. The most remarkable cases I have met with were two bees which possessed the fructifying organs of the drone, and the stings of the worker. I thought the last specimen that I sent was one of this character, but it appears I have made a mistake in sending a wrong one. It is evident that these hermaphrodites do not remain long in the hive, but whether they are expelled by the bees, or make their own exit from the scene, remains yet to be proved. The cause of this anomaly is, in my opinion, as in the case mentioned by Professor Siebold, that of the queen having become aged, many of the eggs having been only partially fertilised. In my present case it is different, the progeny being that of a young queen, and that the most prolific one I have. In this case it would seem to arise from an excess of spermatozoæ, or from the shape of the queen making it impossible for her when depositing an egg in a drone cell of too small a size, to pass the egg without allowing it to come into contact with the fertilising sac. I enclose a few more of these bees, one of which has two small auxiliary eyes instead of one; one of these being situated at the top angle and base of the left eye, the other being in the usual situation.—A Lanarkshire Bee-keeper.

[We are much obliged for the specimens sent, but we do not think we can again trouble Mr. Smith to make an examination of them. These monstrosities are by no means so uncommon as many people suppose.—Eds.]

Early Swarms at Ledbury.—Mrs. Apperley hived a fine swarm on May 1st; Mr. Lawis, at the Gas Works, on May 6th; and Mr. Cox, New Street, May 7th.

Hive Floors.—Some people put great stress on the material of which hives are constructed, but I never notice anyone turning his attention to the floor of the hive, which, in my opinion, is of as much importance as the hive itself. If floors were made of charcoal or other absorbent nonconducting material, bee-keepers would find it a great advantage towards securing the health of bees during winter. I have in some cases used carpet, and have seen coal used with advantage.—A Lanarkshire Bee-keeper.

OUR LETTER BOX.

Double Egg (*T. E. W.*).—One egg within another as you describe is the usual mode of malformation.

A Sitting Producing only One Chick (*Dark Brahma*).—The purchaser should have written to you civilly, and asked for your favourable consideration. He has no legal claim upon you.

Dorkings (*Henricus*).—We fully detailed the chicken culture of Sussex and Surrey last year.

Chickens Partially Formed in the Egg (*Sandy Scott*).—We do not believe it is possible to tamper with the eggs so as to destroy the chicken partially, nor is it necessary. We can at once tell you the cause of your failure does not rest with the seller of the eggs. Either the germ of life in an egg must be preserved entire, or it must be destroyed totally. This latter was not the case. The life was developed and the embryo existed to a certain age, and was then destroyed. This destruction need neither have been wilful, nor the result of negligence on the part of those who had them in charge. With such weather as we have had it was enough for the hen to be absent from her nest in the morning for the cold, frost, and east wind to destroy the chickens. If you ask why all the eggs did not perish alike, their position in the nest would explain that.

Toulouse Geese (*Six-years Subscriber*).—Toulouse Geese are remarkable for large size, and for the facility with which they fatten. They cannot be called sitters, although now and then one has deviated. They lay many eggs. One in our possession once laid sixty.

Spanish Cock's Face Scaly (*Pat*).—We believe with you that sun is detrimental to the faces of Spanish fowls, and we know that to prepare them for hard competition they should be shut up in a dark place; but there has been very little sun in our parts, and a very fine bird we have shows many such spots. Although the hens may not cause them, they continue them by picking, and will eat away the entire white "sac" if they are left alone. We find with one exception the cock always recovers when removed from the hens. The exception is when the discoloration is caused by a weeping from the eye. The liquid discharged would seem to burn in its progress.

Cochin Pullet's Laying (*Lemon Buff*).—It is unusual—one-third double-yolked eggs, but the consecutive laying for thirty-one days is more

so. Laying double eggs is injurious to a bird, and reveals a state of internal disease, which, if the bird be a valuable one, should be remedied Castor oil should be given freely, a table-spoonful every other evening. It would be well to follow this with Baily's pills.

Brahma Hen not Laying (*Subscriber*).—Your hen is, beyond a doubt, out of order—very like'y too fat. We think she is so fat internally that the functions of the body are interrupted, and the passage almost stopped. This would account for the inflated crop. The treatment will be the same as that of the former case, but it will have to be continued longer. She will not be well till she is cleared of her fat. Feed on ground oats or barleymeal in the morning, some scraps midday, and meal in the evening. Feed scantily, and avoid all made foods of every kind.

Ascertaining the Fertility of an Egg (*Serafina*).—It can be seen at the end of four days whether an egg is fertile. It is only necessary to look through the egg from a dark place into a strong light. The contrivance of our fanciers and breeders of former years, was to take the sun as nearly as possible at meridian, to shut themselves in a dark stable or outhouse, and close the door with the exception of a crack. The two hands were then put together telescope fashion, with the egg at the extremity brought to the crack in a line with the sun. The eye was then applied to the other end of the improvised telescope, and sought the sun through the egg. If it be fertile, and life has begun, there is a dark streak visible in the yolk. If at the end of four days everything remains *in statu quo* there is no hope of a chicken. If a chicken has been formed, and is dead in the egg, there is fault with the hen or her masters.

Hens in Two Hundred Square Yards (*Alpha*).—You cannot do better than have Brahmas If you have non-sitters, you must give up all idea "of a fowl now and then for the table." They will not eat lawn cuttings. If they get too fat feed them less, and if they have no grass, let them have as often as may be convenient some large sods of growing grass cut with plenty of mould. If you make up your mind for non-sitters, try Spanish or Crêve Cœurs, the latter we think the hardier.

A Four-clawed and a Five-clawed Chicken in One Egg (*F. P.*).—That which you relate was denied for many years, but has now occurred so often it ranks among admi ted facts. Although it is unthankful evidence, we should look askew at the parent of a four-clawed Houdan Sports and freaks will occur, as, for instance, a Dorking may come four claws, or a Hamburgh with five, but there is always the suspicion of a "bad cross," and that the fault is inherited from it.

Rearing Young Partridges (*Subscriber*).—There is no difficulty in rearing Partridges. They are hatched to take self-care. Let the hen be in her rip in a dry field, a grass field is best. Mow a place in front of the rip 2 yards square. Keep them well supplied with fresh water, and feed them with bread and milk, chopped egg, curd, and bruised wheat. You may at times give some dough mixed dry enough to crumble when thrown down.

Egg-eating Hens (*Despair*).—It is an unnatural propensity, and has arisen from neglect and from the want of proper feeding and attention. All the hens do not indulge such a depraved appetite, and half the eggs are gone. Kill the peccant fowls, and place all the remaining eggs under the virtuous ones. When convenient, send them all to the cook. If you are in difficulty about this, shut them in very low baskets where they cannot move, keep them there till they hatch, taking them out once every day to feed.

Various (*W. B. I.*).—It is not necessary nor desirable for Black Red Game Bantams to have partridge markings on the wings; the hen will be better without them. It is not necessary that an Antwerp Pigeon should have a black beak.

Sex of Eggs (*Idem*).—The question of the sex of eggs goes back to Columella. The moderns have tried to discover the "real thing." The result has been that it is heresy to deny that pointed eggs contain cocks and round ones pullets. Just as the possessor of the philosopher's stone was always the poorest man in company, so the last man who understood the sexes of eggs in our presence picked twelve pullets, and out of them (Houdin outdone) produced twelve cocks.

Sick Pigeon, &c. (*West View*).—Has not your Dragoon the roup? Has he no discharge from his nostrils and mouth? Warmth and hempseed are best. We know of nothing that will make your hen keep longer to her chickens; it is unfortunate, as the chickens are sure to be the worse so early in the year. If the hen absolutely leaves them put them at night in a warm coop on straw, and cover over the front with mat or carpet. You can breed one year from the same strain without injury.

Poison instantly Killing Mice (*An Original Subscriber*).—"If you had read my article more carefully you would have noticed that the mice so instantaneously killed were not in my Canary's cage, but in the cage of 'a lady.' I have, through a friend, put myself in communication with the lady, who says the poison used is called 'vermin-killer,' and sold in this neighbourhood, but I do not know it. The points of the story which struck me were the adroitness with which mice will get into a cage, and the care to be used to avoid their inroads.—Wiltshire Rector."

Canaries (*W., St. Leonards-on-Sea*).—Brent's "Canary and the British Finches" contains all that you inquire about. You can have it free by post from our office if you enclose 1*s.* 7*d.* in postage stamps with your address.

A Strong Stock not Working (*E. Mills*).—Your hive seems to have lost its queen. If you can procure a small piece of comb with eggs or brood of a suitable age, insert it among the brood combs of your hive, and your bees will most probably raise a queen. If you could obtain a fertile queen, and could introduce her successfully, of course you would gain a considerable amount of time, but the first plan is the most simple. We could not reply to your query in time for last week's issue as you requested.

Hive not Working (*E. H. R.*).—Your hive has most probably lost its queen. If it is populous give it a small piece of brood comb containing worker eggs or very young larvæ, and the bees will most probably raise a queen. If a moveable bar hive the process is very easy; but if not, you must turn the hive up, and in the best way you can cut out a piece of one of the central combs and insert the piece of brood comb.

Rubbish Cast out of a Hive (*A Novice*).—The specimen of the rubbish sent seems to consist of the debris of granulated honey, scales of wax as dropped from the bodies of the workers, and the excrement of the larvæ of the wax moth. There was also one of these grubs in a very thriving condition. The fact of the bees being busily engaged in dragging out this refuse from the hive induces us to advise you leaving them alone at present If the state of things should, however, not improve in the course of two or three weeks perhaps you will communicate with us again.

Artificial Swarming (*Idrone*).—It may be laid down as an unalterable rule that the hive which contains the old queen should always occupy the original stand. This applies, whether you remove a single comb with the queen on it and place it in a new box, or whether you make an artificial swarm by taking out suitable brood combs with a sufficient number of bees in order to raise queens.

Bees Deserting Hive (*B.*).—From some cause or other your swarm had lost its queen, which will account for their desertion. Those bees you saw when you lifted off the cover were probably stragglers from the swarm or from other stocks. We cannot understand why you removed the central frames to give room for the bees to cluster; at any rate it was a great mistake. Your hive did not require any dressing to induce the bees to remain.

Bee-keeping—Bee Species (*E. S. P., jun., Penzance*).—The large bee sent is the female of Anthrophora acenorum, the other is the worker of the common hive bee, Apis mellifica. Without knowing your capabilities as a bee-keeper we cannot advise you as to the sort of hive best for your purpose. It is not advisable to allow swarms of the current year to throw off swarms, but rather to check the propensity if it should manifest itself. Bees can be kept away from any garden. A room or loft may do very well, but there is often more uncertainty as regards the securing of swarms. We would not advise your keeping them in a loft over a stable occupied by horses.

METEOROLOGICAL OBSERVATIONS,

Camden Square, London.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude 111 feet.

Date. 1871. May.	9 A.M. Barometer at 32° and Sea Level.	Hygrometer. Dry.	Hygrometer. Wet.	Direction of Wind.	Temp of Soil at 1 ft.	In the Day. Shade Temperature. Max.	Shade Temperature. Min.	Radiation Temperature. In sun.	Radiation Temperature. On grass	Rain.
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
We. 10	30.217	47.5	44.3	N.E.	51.3	54 6	38.1	85.7	35.4	—
Th. 11	30.155	45.8	41.9	N.E.	50.3	56 3	41.4	90 0	40.9	—
Fri. 12	30.014	48.7	45.6	E.	49.9	63.5	35.0	111.6	33.2	—
Sat. 13	30.014	46.2	42 3	N.E.	51.2	52.2	42 3	70.2	42.8	—
Sun. 14	29.876	49.4	44.0	N.	50.3	59.8	40.2	108.9	40.5	—
Mo. 15	29.889	51.0	44.7	S.E.	50.8	61.0	38.8	112.2	39.1	—
Tu. 16	29.860	56.	49.4	N.W.	51.3	63.9	37.2	109.6	35.2	—
Means	30.008	49.3	44.6		50.7	58 8	39 0	98.2	38.2	—

REMARKS.

10th.—Cold and dull all day but no rain, gleam of sunshine at 4.30 P.M.

11th.—Cold, dry, and fine.

12th.—Cold, dull, and cloudy in morning, fine afternoon, and cloudy at night.

13th.—Dull and cold morning, fine afternoon.

14th.—Sunshine and very bright at intervals, fine day.

15th.—Bright morning, hot sun, and fine day.

16th.—Warmer, fine day, but few drops of rain about 4 P.M.

The week has been rainless except a few drops on Tuesday, colder than last week, and rather below the average of the time of year.—G. J. Symons.

COVENT GARDEN MARKET.—May 17.

An active market for rough goods has somewhat raised the prices, and large quantities are still going north to the local markets, such as Cabbages, Carrots, Turnips, and other spring vegetables. Importations have been moderate, the bulk meeting with a ready sale. Among other things this day we have received Strawberries and Cherries from France and Spain, but they are scarce worth quoting in the list yet. New Potatoes have fallen very much in price, now selling in the retail shops at 2*d.* and 4*d.* per lb.

FRUIT.

	s.	d.		s.	d.		s.	d.		s.	d.
Apples	½ sieve	1	6 to	3	0	Mulberries	lb.	0	0 to	0	0
Apricots	doz.	0	0	0	0	Nectarines	doz.	12	0	24	0
Cherries	lb.	0	0	0	0	Oranges	℔ 100	6	0	10	0
Chestnuts	bushel	0	0	0	0	Peaches	doz.	12	0	24	0
Currants	½ sieve	0	0	0	0	Pears, kitchen	doz.	0	0	0	0
Black	do.	0	0	0	0	dessert	doz.	0	0	0	0
Figs	doz.	8	0	15	0	Pine Apples	lb.	6	0	10	0
Filberts	lb.	0	0	2	0	Plums	½ sieve	0	0	0	0
Cobs	lb.	2	0	2	6	Quinces	doz.	0	0	0	0
Gooseberries	quart	0	8	1	0	Raspberries	lb.	0	0	0	0
Grapes, Hothouse	lb.	6	0	12	0	Strawberries	oz.	0	6	1	0
Lemons	℔ 100	6	0	10	0	Walnuts	bushel	10	0	16	0
Melons	each	6	0	12	0	ditto	℔ 100	1	0	2	0

VEGETABLES.

	s.	d.		s.	d.		s.	d.		s.	d.
Artichokes	doz.	4	0 to	6	0	Leeks	bunch	0	4 to	0	6
Asparagus	℔ 100	4	0	8	0	Lettuce	doz.	1	0	2	0
Beans, Kidney	℔ 100	2	0	3	0	Mushrooms	pottle	1	0	2	6
Broad	bushel	0	0	0	0	Mustard & Cress	punnet	0	2	0	0
Beet, Red	doz.	2	0	3	0	Onions	bushel	7	6	10	0
Broccoli	bundle	0	2	1	6	pickling	quart	0	0	0	0
Brussels Sprouts	½ sieve	0	0	0	0	Parsley	sieve	3	0	6	0
Cabbage	doz.	1	0	2	0	Parsnips	doz.	0	2	1	0
Capsicums	℔ 100	0	0	0	0	Peas	quart	2	0	4	0
Carrots	bunch	0	3	1	0	Potatoes	bushel	2	0	4	0
Cauliflower	doz.	3	0	8	0	Kidney	do.	3	0	4	0
Celery	bundle	1	6	2	0	Radishes	doz. bunches	0	6	1	0
Coleworts	doz. bunches	3	0	6	0	Rhubarb	bundle	0	4	0	6
Cucumbers	each	0	6	1	6	Savoys	doz.	0	0	0	0
pickling	doz.	0	0	0	0	Sea-kale	basket	0	0	0	0
Endive	doz.	2	0	3	0	Shallots	lb.	0	6	0	9
Fennel	bunch	0	3	0	0	Spinach	bushel	2	6	4	0
Garlic	lb.	0	3	0	0	Tomatoes	doz.	0	0	0	0
Herbs	bunch	0	3	0	0	Turnips	bunch	0	0	1	6
Horseradish	bundle	3	0	6	0	Vegetable Marrows	doz.	0	0	0	0

WEEKLY CALENDAR.

Day of Month	Day of Week	MAY 25—31, 1871.	Average Temperature near London. Day.	Night.	Mean.	Rain in 43 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
						Days.	m. h.	m. h.	m. h.	m. h.	Days.	m. s.	
25	Th	Royal Botanic Society's Show opens.	65.4	42.9	54.2	16	58 af 3	56 af 7	43 af 8	15 af 0	6	3 23	145
26	F	Royal Botanic Society's Show closes.	67.4	42.8	55.1	19	57 3	58 7	51 9	51 0	7	3 17	146
27	S		66.5	44.7	55.6	22	56 3	59 7	4 11	17 1	)	3 11	147
28	Sun	Whit Sunday.	68.1	44.4	56.2	15	55 3	0 8	after.	38 1	9	3 4	148
29	M	Whit Monday.	67 5	44.1	55.8	15	54 3	1 8	36 1	59 1	10	2 57	149
30	Tu	Length of night 7h. 51m.	68 4	44.7	56.6	17	53 3	2 8	57 2	19 2	11	2 49	150
31	W	Meeting of Society of Arts, 8 P.M.	69.4	44.8	57.1	16	52 3	3 8	20 4	38 2	12	2 41	151

From observations taken near London during forty-three years, the average day temperature of the week is 67 5°, and its night temperature 44.1°. The greatest heat was 91°, on the 28th, 1847; and the lowest cold 25°, on the 29th, 1865. The greatest fall of rain was 0.97 inch.

PERPETUAL OR TREE CARNATION CULTURE.

THAN the above I do not know any more useful plants for furnishing cut flowers for button-holes and bouquets late in autumn, in winter, and early in spring; and as I have been successful in keeping up a succession of flowers from them during the above periods, and having a plentiful supply of them at Christmas, a few remarks on their culture and general management may be useful.

They are a class of flowers which are generally grown, but from what I have seen and heard the winter supply in many cases has not been abundant. Some of the varieties are not so well adapted for winter-flowering as others, so that to be successful with them it is necessary to obtain the proper sorts, and it is quite as necessary to propagate a fresh lot of young plants every year. To have them in flower early in the autumn the cuttings must be taken off about the first week in February. The small side shoots make the best cuttings: insert from nine to twelve of them in a 5-inch pot in a compost of loam and leaf mould in equal parts, with a large proportion of silver sand. They will soon strike if a temperature of from 55° to 60° can be obtained, especially if they are plunged in a gentle bottom heat.

As soon as the young plants begin to grow pot them off singly in 3-inch pots, plunging them again in the bottom heat, if convenient, until fresh roots are formed, and as soon as the plants are well established they will succeed best in a cold frame. Of course care must be taken with these as well as any other plants not to remove them from a hot to a cool position too suddenly, so as to check their growth. Tree Carnations succeed best in the following potting materials:—Turfy loam three parts, leaf mould one part, and rotted frame manure one part, with the addition of some silver sand, more or less of the latter according as the loam is of a light or heavy nature.

Small sticks should be placed to the plants at an early stage of their growth, and admit air very freely to them in fine weather, entirely removing the lights from the frame so that the plants may be kept short-jointed and robust. Repotting should be attended to before the plants become potbound. I do not advise shifting them into very large pots for flowering them in; 6, 7, and 8-inch pots are the most suitable sizes. Some of the varieties being more robust in their nature will require the largest size. I have at the present moment in 6-inch pots plants with from nine to a dozen fully-expanded flowers on each, and they were shifted into those pots last year in August. The plants that are in flower now, and those which will continue to supply a succession of flowers throughout this and the next month, were from late-struck cuttings.

If convenient, a few cuttings should be struck about the first week in each month, from February to May inclusive. About the first week of May the earliest-struck cuttings will be far enough advanced to be plunged in a position out of doors, but before turning them out see that no green fly remain on the plants. This pest, and the red spider, are the only enemies which I have seen attack the Carnation in pots. Fumigate with tobacco smoke for the green fly, and remove the red spider as soon as it appears with the syringe. In dry weather, whether red spider attacks the plants or not, it will be beneficial to syringe them once or twice a-day.

When the plants have grown about 9 inches in height pinch out the point of the leading shoot; this will cause three or four shoots to break out, which should be tied to neat sticks as they advance in growth. When the pots are tolerably full of roots abundant supplies of water will be required by the plants. If watering is neglected the oldest leaves will turn yellow prematurely, which will make the plants look naked when they are removed. A span-roofed pit or greenhouse is the best place to remove them to in winter, and to have a succession of flowers during this period the plants should be kept near the glass in a house with a temperature of from 50° to 55°, as well-developed flowers cannot be obtained from plants growing in an ordinary greenhouse. I generally remove three or four plants at a time to the forcing house, and as the flowers are required, fresh supplies are brought in from the greenhouse. After the 1st of April the flowers expand freely in a greenhouse temperature.

The following varieties I have found good for winter-flowering—viz, La Grenade, scarlet; Boule de Feu, bright red, slightly flaked with white; Gloire de Lyon, a very fine crimson flake; Queen of Whites, an excellent free-flowering variety of good habit; and Ascot Yellow, the best in this class. Prince of Orange is said to be good, but I have not proved it sufficiently; it is of more robust growth than Ascot Yellow. If very large flowers are required grow Souvenir de Malmaison, a flesh-coloured flower, and Madame Adèle Calmeto. Of this variety a flower before me measures 3 inches across, blush, flaked with rose, but the flowers are somewhat rough in outline. Proserpine, scarlet, in the way of, but a superior flower to, La Grenade; Gloire de Montpensier, a full rose flake; and The Bride (Turner), a very fine flower, pure white, and clove-scented; it should not be confounded with The Bride, a fringed white flower of bad habit and much inferior.

Of recent varieties White Nun and Maiden's Blush are true perpetuals, the first-named is superior to Queen of the Whites, having a smoother edge. Maiden's Blush is also a desirable variety. Another flower which will be very valuable for early spring forcing has been raised by Mr. W. Lee, who also raised White Nun and Maiden's Blush; it is the new forcing Pink Princess Louise. The flowers are very large, of a bright red colour, and are quite distinct from anything of the kind yet seen.

There are, doubtless, in the hands of other growers as good flowers as those which I have named above. Some that I have seen named in the gardening papers I have failed to obtain. If any of your correspondents can add anything to the above either as regards culture or

the best sorts to cultivate, it would be extremely useful to a large number of your readers.—J. Douglas.

STRAWBERRY PROSPECTS.

Seeing remarks in reference to the prospects of the Strawberry crop by your correspondents, "R. F." and "E. W. R.," at pages 293, 317, and 320 of The Journal of Horticulture, and as "R. F." wishes for others interested in the cultivation of the Strawberry to state what their prospects are for the present season, I at once went over my plantations to see what chance we had of a crop in the present year. Like your correspondents, "R. F." and "E. W. R.," I have been successful in producing heavy crops of Strawberries for many years. In 1863 and 1865 I gave full particulars in the Journal respecting my mode of growing this fruit, and each succeeding year we have been progressing and improving.

During the last three extraordinarily dry seasons our crops have been immense, and while those of many of our neighbours in all directions entirely failed our crops were never better. We have three plantations, and my practice is to destroy one plantation every year, and make a fresh one. The one which was planted last August contains six varieties, and every plant without exception is showing an abundance of fruit. Eclipse, a favourite prolific variety, is averaging about ten or twelve trusses to each plant on the new bed. The two-year-old plantation also promises well; and the three-year-old one, I have no doubt, will be equally prosperous.

My practice is to dig deeply and manure freely, putting plenty of foldyard manure at the bottom of the trench. However deeply the manure is dug in, the roots will find it, and this supports them against the contingencies of dry seasons. The first runners which I can obtain I have layered in 48-sized pots, and as soon as they are well rooted they are planted in their final positions. When the plants are in bloom I give them a thorough soaking of manure water. This tells considerably on the bulk of the future crop. After each gathering, or at least when the beds have all been gone over, if the weather is dry the beds are drenched with clear water. This we can do with perfect ease, as we have pipes laid from large tanks in elevated positions, and by attaching our indiarubber hose and turning on the water the work of irrigating the whole of the plantations can be performed by a boy with very little trouble. After the plantations are first formed I never again have the ground disturbed with either fork or spade. The ground is kept clean with the Dutch hoe, and the runners are not allowed to remain on the plants unless they are required for propagating.

I differ from your correspondent "E. W. R." with regard to planting those plants which have been forced in-doors one season. I have frequently tried them, but never found them do so well as fresh runners of the current season.

With regard to sorts, I have tried many, but my favourites are Eclipse, Dr. Hogg, Sir J. Paxton, and Cockscomb. Mr. Radclyffe I have grown, it is good in flavour, but not in other properties satisfactory.—Quintin Read, *Pleasley Vale Gardens, Mansfield.*

PRIMULA CORTUSOIDES AMŒNA CULTURE.

In consequence of the hurried manner in which I wrote the remarks respecting Primula cortusoides amœna, at page 303, I forgot to put in the specific name of cortusoides. Your correspondent "J. R.," is, therefore, quite right in supposing the recommendation given has reference to that variety.

In reply to "J. R.," page 332, respecting the kind of soil I use for the growth of these plants, I may state that I did not make up any particular compost for them, but made use of some already mixed for bedding plants. I happened to have a quantity of soil mixed, as I was about potting-off a lot of Geraniums from their store pots. I am not very particular about the exact proportions of the soil I use for these plants, but in order to give an idea of its general character, I may say that it consists of about three parts loam, one part rotten dung, one part leaf mould, and one part sand, and the whole is passed through a coarse sieve. It did not contain any peat. As before stated, I had a quantity of this mixture lying on the potting-bench, and I made no addition nor alteration. I divided the plants in the way described in my former paper, I put each piece in a 6-inch pot with some of this soil, and the roots very quickly took to it, and were running round the inside of the pots. Since writing I have repotted the whole in 8-inch pots, as I advised at page 303, making use of the same kind of soil as before, and I may remark that this was exactly a repetition of the treatment and soil used in previous years with the same good results.

The general character of the soil about Didsbury is not of that black peaty nature noticed by "J. R.," but is of a light sandy nature resting upon a bed of gravel, and in many places not more than 5 or 6 inches in depth. To the south of Manchester the soil is just what "J. R." describes; but Didsbury is to the south-east, and the character of the soil is totally different.

In order to test the hardiness of Primula cortusoides amœna, I have planted some out in the borders. I did this in February, at the time I divided the plants, and shall, therefore, next winter be able to decide the matter. I have already, however, had experience enough to convince me that they are comparatively useless for culture in the open air, at any rate so far north as Manchester; for although the plants grew moderately well and had flower stems nearly as fine as those in pots, yet the delicacy of the flowers and the size of the truss were such that they were unable to stand the rains or the cold east winds, but were completely spoiled as soon as the blooms were fairly opened. It is just the same with that fine hardy plant Dielytra spectabilis. Seen in a greenhouse in March, it is one of the most beautiful plants that can be placed there, while those outside are torn to ribbons by the merciless winds. It is in the cool greenhouse that Primula cortusoides amœna is seen in all its beauty, and if it were possible I would recommend it even more strongly than I did before. I find that it requires a considerable amount of moisture while growing and blooming, for it very soon shows signs of distress if the roots are allowed to become at all dry.

I can assure your readers that there is no difficulty whatever in growing this plant, and I have fully and freely related the whole of the practice as it is followed by myself, and which has resulted in such gorgeous displays of bloom. I may state that this plant was introduced into England from Japan by Messrs. Veitch, and was first shown by them at the International Exhibition, South Kensington, in 1866. A small plant was shown under a bell-glass. I made a note of it at that time, and afterwards purchased a plant, from which the whole of my stock has been obtained. I do not know whether it produces seed or not. I have seen none, nor have I heard of any, though I have examined some of the best catalogues to see if could find it; but plants are cheap enough now, as they can be had for 3*s.* 6*d.* each, and they are easily increased by division.—Thos. Jones, *Gardener to J. E. Taylor, Esq., Didsbury, near Manchester.*

THE CUCUMBER AND MELON DISEASE.

Having been a sufferer for several years from the above disease, I can sympathise heartily with those growers who can neither get rid of it nor cure it; and as I have been free from it the last two seasons, I thought, on reading Mr. Fish's remarks in the Journal of April 13th, that an account of the method by which I prevented this plague would not be unacceptable to your readers. Like Mr. Fish, I tried every remedy I could think of as likely to be of any use—fumigating with tobacco, with sulphur in the house in which the infected plants had been grown, dusting the plants with sulphur, lime, and tobacco powder, getting fresh seed, and planting in fresh soil brought from a distance, but all to no purpose. At length I thought the disease might have been caused by the liquid manure made from sheep dung with which the plants had been watered, and I determined to try the effect of discontinuing the use of it. I had the old plants destroyed, the house and pit well washed all over with soft soap and warm water, the walls whitewashed, and plants raised from seed planted in soil composed for the greatest part of good, light, turfy loam, with a small quantity of manure, sand, and leaf mould; the Melons in turfy loam alone. I had them watered and syringed with clean water, warmed to the same temperature as the house, pit, or frame in which the plants were grown, and by these means I have quite got rid of the plague.

Since I first had any experience of this disease I have been of opinion that it is similar in its character and effects to the Potato disease, and while there was a trace of it in house, pit, or frame the infection or contagion always reached the young plants in other houses or pits, and the brown spots appeared on the leaves generally when the plants had reached the fruit-bearing state: hence the necessity of destroying all infected plants, and well washing and thoroughly cleaning all structures

in which Cucumbers or Melons have been grown before beginning with young plants.—William Whittaker, *Crewe Hall, Cheshire.*

A FLORIST'S GARDEN.

S. M. TANDY, ESQ.'S, DUBLIN.

I see in my rambles many a garden. I see some whose noble owners know no more of their contents than is implied in seeing the plants that decorate their dinner table, or the fruits that form their dessert. I see others into which if you go during nine months of the year you will see nothing but bare beds and frames full of small pots, but which in June burst forth into a blaze of scarlet and yellow, suggestive of a Hindoo's bandana. I see others through which the owner carelessly saunters, but knows nothing of the flowers that tend to make them beautiful; and others, again, where each flower is a favourite which no rude hands must spoil, and only the dainty fingers of the fair owner must tend. But after all (but this may be simply the raving of a bigoted old florist), I know of no garden which gives its owner such constant enjoyment as that of the florist. The man must be a florist who owns it; he cannot delegate to any gardener however skilful the care of those pets which he tends, and, indeed, few gardeners know much about them, and among some of the best specimens of florists' gardens is the one of which I now write.

Let it not be supposed that I am writing about any grand place, with magnificent grounds or elaborate ranges of glass—no! Mr. Tandy's is simply the garden attached to a semi-detached villa in one of the pleasant outlets of Dublin, and yet he has made No. 4, Appian Way, well known in the Dublin horticultural world, and has established for himself a name as one of the first florists in Ireland. This may seem to be a large word, but I will adduce proof that I speak advisedly. His garden is not, certainly, altogether a quarter of an acre, and yet he has managed in this to cultivate flowers with which he has beaten in fair and open fight the largest nurserymen in Dublin and gentlemen whose means are unlimited, and who could put his whole garden into their Grape houses alone. This garden is never empty. In spring it is gay with Hyacinths, Tulips, Anemones, and Ranunculus, while in summer it bursts forth in flaunting yellows and dazzling scarlets, as in duty bound in these days of bedding-out, so that it never fails to have interest in it both for the initiated and the multitude.

The Hyacinth is a flower which is here cultivated with a zeal and success I have not seen amongst amateurs in England. At our metropolitan shows the distance between the growers and amateurs is always very great, but in Dublin the amateur beats the nurseryman, and the flowers staged by Mr. Tandy would not disgrace Mr. Cutbush's, Mr. W. Paul's, or Messrs. Veitch's stands. This is attained by an amount of perseverance that does great credit to himself and his experienced gardener. Last year a Hyacinth Show was originated at Dublin, and in this Mr. Tandy carried all before him; but this year it was not attempted, and Hyacinths were shown at the exhibition on April 20th. It was no little difficulty to keep them back till that time, but so carefully were they managed that the Society's cup again fell to Mr. Tandy, he beating, as I have said, both nurserymen and amateurs whose means and appliances were tenfold greater than his. One thing which especially marked the good cultivation displayed was the erect stiff character of the foliage, and this when it must have been necessary to so much retard the flowers and shade them. The varieties grown included all those which are prizetakers at the London shows. The pots used in Dublin differ very much from those used here, being very deep and narrow. I am not sure that they do not better suit the Hyacinth, the roots of which travel deep in search of nourishment rather than wide.

I have already alluded to Mr. Tandy's collection of Auriculas as having gained for him the first prizes at the Dublin Show. It is one of which the owner may well be proud, comprising as it does numerous plants of the very best varieties in growth. The Dublin florists have long been famous for their Auriculas. My memory travels back to times when Dr. Plant was *facile princeps*, but fine as his collection was, it could not be compared with this; for although many of the old flowers still hold their place, although I have never since seen, or ever hope again to see, such Booth's Freedom or Heys's Apollo as I used to see with him, yet were there no grey-edged flowers in those days to compete with George Lightbody or Richard Headly, while here there were numerous plants of these and other varieties of well-known character—Chapman's Maria and Sophia, Cheetham's Lancashire Hero, Read's Miss Giddings, Leigh's Colonel Taylor, &c. There was one fault connected with his style of growing which he will be able to remedy before another season—the leaves and footstalks were somewhat drawn. This arose from the necessity of shading from the sun, and from the want of a house to bloom the plants in. He intends erecting one, and will, I have no doubt, experience the comfort and benefit of such a structure—the comfort, because you have all your flowers under your eye at the same time; and the benefit, because you can shade by either whitening the glass or putting tiffany over it. I saw with him and my brother some flowers I had not previously seen—Pohlman's Garibaldi, Lightbody's Sophia Dumaresque, Cunningham's John Waterton, &c., about which I may have to say more by-and-by.

The Gladiolus is another of Mr. Tandy's favourites, and this he cultivates under special difficulties. It is well known that it requires a change of soil, probably more than other flowers that are grown; indeed it ought not to be grown in the same place more than once in three years. Now in so small a garden as his, this is simply impossible. It is remedied, however, by taking out the earth from the beds and refilling them with fresh soil each year; and so effectual has this been, that the first prize for thirty-six blooms was taken last year by Mr. Tandy from his three small beds, beating growers who had much larger collections and more ample space than he had. He can do something, too, with Asters, while his Chrysanthemums comprise most of the best varieties in growth.

I have said enough to show that in a small space of ground a great deal of enjoyment may be had by a thorough florist, and that it need not be a chaos of disorder as some would assert, and I could only wish that we had more such gardens around London. I sigh over the times that are past, and hope for some brightness in the future. I should add that while Mr. Tandy is assisted by a thoroughly practical gardener, when he is not at home his garden is watched over tenderly by a pair of black eyes that will not let much escape them.—D., *Deal.*

DAMSONS.

Mr. Thos. Rivers writes in your last number, page 349, "This sort is the Prune Damson, larger and superior in flavour to all others." In Mr. Rivers's catalogue for 1870 he writes thus under the head of Damsons: "Prune.—Oval, small; a great bearer, and much esteemed in the north." "Cluster or Crittenden.—Roundish oval; a variety which has been recently brought into notice for its goodness and extraordinary fertility; it forms a charming and fruitful pyramid." Mr. Rivers having a most fertile pen, often, as I think, writes without stopping to consider what he has written formerly. It is certainly rather provoking, after one has bought a stock of the Crittenden Damson, to find him writing up another which he has himself rather disparaged in some catalogue. I have found it the same in his Pear list and subsequent writings. May I ask some explanation through your pages?—Inquirer.

PIGMY ROSE TREES FOR TABLE DECORATION.

Among the other subjects which we use at the present time for table decoration, we find these very useful. From our first batch of Tea varieties in March, and as soon as the flowers were cut, we took off a lot of cuttings and put them in pots, placing about a dozen round the side of a 5-inch pot. Kept in a genial bottom heat they quickly rooted, and as soon as they began to push we potted them off in small pots. After they were potted-off we kept them still in a gentle bottom heat, and for the last three weeks we have been using nice little plants, the same as one I forward.—Robert Mackellar, *Elvaston.*

[The specimen is very effective, about 9 inches high, has a single stem with one flower on its summit, and is well-furnished with leaves to the base.—Eds.]

Sparrows attacking Wistaria.—Your correspondent is not singular in finding sparrows attacking his Wistaria. About three years ago I was rejoicing in the glorious promise of bloom which my Wistaria was giving for the first time, and in the pride of my heart I took a friend out to see what the treo would be. Alas! to my dismay, I found what had two days before been clusters almost ready to open were mere budless spikes. The sparrows had stripped off every flower, and left nothing but the stalks to show what had been. Since that time I have

always put threads over the Wistaria just as I do over my Gooseberry and Currant bushes. My friends had just begun their work this year, but I was in time to stop much mischief. I believe that they pluck the buds for the sake of the moisture which they afford, as it is in the driest weather that the attacks are made. I am always obliged to thread my Crocuses and Primroses in the same way, the little marauders breaking these off, and leaving them scattered on the ground, unless some preventive measures are taken.—H. G. Merriman, *Guildford.*

CRYSTAL PALACE SHOW.

May 20th.

Rarely has there been a more successful May Show at the Crystal Palace than that held on Saturday last; the weather was favourable, the attendance large, and the subjects exhibited nearly if not quite as numerous as in past years, while in some instances there was a great advance towards perfection.

For fifteen Stove and Greenhouse Plants, Mr. Baines, gardener to H. Micholls, Esq, Southgate House, stood far in advance of all competitors, with specimens which for excellency of culture and brilliant effect have never been equalled at any show which we have seen. They were simply perfect, and whatever differences of opinion there may be as to large *versus* small specimens, there could be none as to the superiority of the former when exhibited in such perfection as Mr. Baines has done. On this occasion his plants were Erica ventricosa coccinea minor 4½ feet in diameter; Eriostemon neriifolium; Epacris Eclipse nearly 5 feet high, and quite 4 feet across; Azalea Stella, the finest specimen ever seen of that brilliant variety; white Azalea Magnificent, quite 5 feet high, two Ixoras, Hedaroma tulipiferum, Boronia pinnata, Aphelexis macrantha purpurea and humilis rosea, Eriostemon densiflorum, Erica Cavendishii, beautifully furnished; Clerodendron Balfourianum, and Anthurium Scherzerianum with sixteen large spathes and three advancing. With Mr. Baines's collection in the eye, it is hardly possible to do justice to those which were shown against it in the same class, the one throwing the others so completely into the shade; nevertheless, Mr. Chapman, gardener to J. Spode, Esq., Hawkesyard Park, Rugeley, sent a collection containing excellent specimens of Pimelea spectabilis rosea and mirabilis, Bougainvillea glabra, Azaleas, Epacrises, and Chorozema varium nanum. The third and fourth prizes went to Mr. Wheeler, gardener to J. Phillpott, Esq., and Mr. Peed, gardener to Mrs. Treadwell, Lower Norwood.

In the nurserymen's class for ten, Mr. Williams, of Holloway, was first with Azalea Empress Eugénie, a very large plant and a dense mass of blossom; Boronia pinnata; Azalea Chelsoni, fine; Anthurium Scherzerianum; Clerodendron Balfourianum, and other good specimens. Messrs. Jackson & Son, Kingston; Mr. Morse, Epsom; and Mr. Cuthush, Barnet, where the remaining prizetakers.

In the amateurs' class for ten, Mr. Ward, gardener to F. G. Wilkins, Esq., Leyton, was first with a very fine collection, in which we particularly noticed Tetratheca ericæfolia, Dracophyllum gracile, Aphelexis macrantha purpurea, Statice profusa, large, and in great perfection, promising to last the season in bloom; Chorozema Chandleri, Hedaroma tulipiferum, and Clerodendron Balfourianum. Mr. Peed, Mr. Carr, gardener to P. L Hinds, Esq., Byfleet Lodge, and Mr. G. Wheeler, gardener to Sir F. Goldsmid, Bart., M.P., Regent's Park, took the remaining prizes.

In the class for six Fine-foliaged Plants, the first prize was withheld, and a second was awarded to Mr. Carr, extra prizes being given to Mr. A. Wright, gardener to C. H. C. Roberts, Esq., Regent's Park, and Mr. R. Laing, gardener to P. L. Flowers, Esq., Tooting. Several of the exhibitors appeared to have misapprehended the terms of the schedule, and exhibited flowering plants along with ornamental-foliaged plants, instead of the latter alone. Those shown were good without being remarkable. Groups arranged for effect came from Messrs. Rollisson, Messrs. Carter & Co., Mr. Foreman, gardener to W. Wright, Esq., Denmark Hill, and Mr. J. Woodward, gardener to Mrs. Torr, Ewell, and comprised a great variety of plants. In our own opinion the best effect was produced by Mr. Woodward's arrangement, though the plants were neither so numerous nor so valuable as those from the other competitors. Viewed from the opposite side of the transept, the white-flowered Deutzias and the hanging-baskets of Ferns at once arrested the eye, and the effect of the whole was very graceful.

Heaths were numerously shown, mostly by the same exhibitors as those who were at Kensington on the previous Wednesday, and in most cases the plants were identical. Ventricosa grandiflora and magnifica, tricolor Wilsoni and elegans, tortiliflora, elegans, Spenceriana, perspicua nana, and Beanmontia were well represented in several collections. The prizes went to Messrs. Jackson & Son, Mr. Morse, Mr. Ward, Mr. Peed, Mr. Carr, and Mr. J. Wheeler.

For Azaleas, in the nurserymen's classes Mr. Williams was first for eight, with, among others, fine specimens of Napoleon III., Countess of Stamford, Eulalie Van Geert, and Alba Meliora. Small plants from Messrs. Dobson & Son had a third prize, the second being withheld. Messrs. Lane were first for six, but the plants were not up to the mark of those which Messrs. Lane usually exhibit. Among amateurs the prizes were taken by Messrs. G. Wheeler, J. Wheeler, W. Chapman, and Peed, who had well-grown plants in good bloom, but not calling for special remark.

Pelargoniums were for the most part the same as those shown at Kensington, with a few additions; Mr. Ward, gardener to F. G. Wilkins, Esq., Leyton, was first in the amateurs' class, Mr. James second, and Mr. Foreman third. Of nurserymen, Messrs. Dobson and Sons, Isleworth, were the only exhibitors, taking first prizes for both Show and Fancy varieties.

Of Roses, Mr. Turner, of Slough, and Messrs. Paul & Son, of Cheshunt, exhibited in the class for ten, in 13-inch pots, two of the most magnificent collections ever seen. That from Mr. Turner, admirably arranged as his wont is, was altogether remarkable, such was the size of the specimens and their abundance and perfection of bloom. They were Miss Ingram, Duchesse de Caylus, John Hopper, Victor Verdier, Souvenir de Malmaison, Paul Perras, Général Jacqueminot, Anna Alexieff, and Madame de St. Joseph. It would be vain to heap on these superlatives—they stood out grand examples of our finest pot Roses. Messrs. Paul & Son had a second prize for a collection which in some respects scarcely yielded to that just noticed—a particularly even lot scarcely so large as specimens, but also in magnificent condition. Of the varieties of which this consisted, we may signalise Charles Lawson, Senateur Vaisse, John Hopper, Mdlle. Thérèse Levet, and President, but there were others nearly equally good. For twenty and twelve varieties respectively, first prizes were taken by Mr. Turner and Messrs. Paul with plants which, though not so large as those just noticed, and not so full of bloom, were admirable for the size of pots in which they were grown. After these the Roses in the amateurs' class, as they always are, were poor. Mr. Gold, gardener to H. Dorling, Esq., Strend Green House, Croydon, was first; Mr. James, gardener to F. Watson, Esq., Isleworth, being second.

Orchids were not very numerous, though there were several fair collections, and although there was no retrogression there did not seem to be any advance. For eighteen Mr. Burnett, gardener to W. Terry, Esq., Peterborough House, Fulham, was first, with good examples of Cypripedium Stonei, barbatum, and villosum, Cattleya Mossiæ, Lælia purpurata, Foxbrush Aërides, Saccolabium retusum, and Phalænopsis Luddemanniana; Mr. Wright, gardener to C. H. C. Roberts, Esq., being second. For ten Mr. Ward was first, Mr. Birmingham, gardener to G. B. Arnold, Esq., South Norwood, second. From the former there were good examples of Oncidium Lanceanum, C. serratum, Anguloa Clowesii, and others; whilst Mr. Birmingham had a fine specimen of Dendrobium nobile, Lælia purpurata, and Oncidium sphacelatum. Mr. J. Wheeler was third. In the nurserymen's class Mr. Williams stood alone. Cypripedium caudatum in this collection had twelve flowers, and with it were C. villosum, Vanda suavis, Aërides Fieldingii, a splendid Phalænopsis Schilleriana, and Saccolabium retusum, with four fine spikes. In the amateurs' class for six, the awards were made to Mr. Woodward, gardener to Mrs. Torr, Mr. Peed, and Mr. Burnett. The first named had a remarkably fine example of Trichopilia suavis with three dozen flowers.

Among the miscellaneous subjects were beautiful boxes of cut Roses from Mr. William Paul, also baskets of new Pelargoniums; Waltham Bronze and Marchioness being very striking, and together with these was Waltham Bride, with white flowers and white-edged leaves, which has before been frequently noticed as a desirable variety. Princess Beatrice Rose from the same exhibitor again received a first-class certificate. Messrs. Dobson & Son, of Isleworth, sent a fine collection of herbaceous Calceolarias; Messrs. Lane, one of Rhododendrons which was very effective; Messrs. Downie, Laird, & Laing, a collection of Caladiums and other fine-foliaged plants; Messrs. Carter and Co., a similar group; Mr. Emmett, gardener to H. Piper, Esq., West Dulwich, a collection of Fuchsias and standard Azaleas. First-class certificates were awarded to Mr. Williams, who exhibited a choice collection of new plants, for Adiantum asarifolium, Gymnogramma Pearcei, Rhapis humilis, Yucca de Smetiana, and Senecio argentea, a neat silvery-leaved plant. The last named, from Messrs. Downie and Co., also received a similar award, likewise Tropæolum Mrs. Bowman, which was shown at Kensington three weeks previously. Mr. Turner, of Slough, had a first-class certificate for Pelargonium Chieftain, one of the show varieties, soft rose, the upper petals crimson edged with rose, the throat white, a very pretty variety of excellent shape. In front of the orchestra were two octagons of bedding plants, charmingly arranged by Mr. Gordon, and an oval group of fine-foliaged plants by Mr. Williams, of the Crystal Palace.

A FLORIST'S NOTES AT THE CRYSTAL PALACE.

A grand Show and a lovely day tended to make this a most attractive Exhibition, while all the arrangements were of that complete order which characterises everything connected with the Crystal Palace Shows; especially was this the case with stove and greenhouse plants. I do not believe that such a collection of plants as that staged by Mr. Baines was ever before exhibited; but with these I have nothing to do, I simply have to write of those flowers for which prizes were offered by the Metropolitan Floral Society—Tulips and Pansies. It was a great pleasure, although the competition was not very great, to see these fine flowers once more asserting their position, and I am convinced that it only needs an earnest effort on the part of florists generally, to insure the increased cultivation of these once-highly-valued favourites.

In the class for thirty-six Pansies, the first prize was taken by Messrs. Downie, Laird, & Laing, for beautifully smooth and well-finished blooms of A. Downie, Rev. H. Dombrain, Alexander McNab,

De Foe, Joseph Jenner, Yellow Queen, Allan Ramsay, George Muir head, Imperial Prince, Cupid, Robert Barns, Prince of Wales, M. A. Buchanan, Jesse Laird, J. B. Downie, &c. Mr. Hooper was second with, amongst others, Village Maid, Blackbird, Le Grand, Lord Derby, Prince Teck, and Mr. Gladstone. They were not at all equal in quality to those which Messrs. Downie & Co. exhibited. Mr. James was third, with neat but small blooms. In Fancy Pansies, Messrs. Downie, Laird, & Laing exhibited a fine stand, comprising Mr. Sutherland, Mrs. R. Dean, Mr. Davidson, Grand Condé, and Agnes Laing. In the class for twenty-four Pansies, amateurs, Mr. James took the second prize. His blooms although neat were very small, while in the class for twelve Fancies, there was no competition.

In the class for thirty-six Tulips, Mr. Turner was first with a magnificent collection, comprising splendid clean blooms of Polyphemus, Dr. Horner, Aglaia, Sarah Headly (Headly's), Adonis (Headly), a beautiful flower; Vivid, Duchess of Sutherland, Triomphe Royale, and others of the very best character. Nothing could exceed the beautiful cleanliness of these flowers, while their size and freshness were equally conspicuous. Mr. Hooper, of Bath, was second with a collection not very well staged, comprising some good flowers, but a very far way behind those exhibited by Mr. Turner.

In the class for twelve Tulips, the first prize was taken by Mr. Mercer, of Hunton, near Staplehurst, with some nice, clean, although small blooms of leading varieties; and Mr. Norman, of Plumstead, was second with small flowers, which, however, exhibited a good deal of want of freshness, doubtless owing to the locality in which they were grown now being so completely surrounded by buildings. I wish we could see a little more of the floricultural spirit that exists in the north disseminated amongst lovers of flowers in the neighbourhood of London, and then these exhibitions of cut flowers would greatly increase in importance.—D., *Deal*.

ENTOMOLOGICAL SOCIETY'S MEETING.

The May meeting of the Entomological Society was held on the 1st inst., Professor Westwood, V.P., in the chair. Amongst the donations to the Society's library received since the last meeting were the publications of the Royal and Linnean Societies of London, and the Societies of Vienna, Berlin, Italy, &c.; also an important work on the insects of the State of Missouri, with the title, "Third Annual Report on the Noxious, Beneficial, and other Insects of the State of Missouri. By Charles V. Riley, State Entomologist"—published at Jefferson City during the present year. Also the new and very complete Catalogue of the European Lepidoptera, just published by Messrs. Staudinger & Wocke, and the last volume of Thomsen's Coleoptera of Scandinavia, completing the work.

Mr. Higgins exhibited a beautiful series of Butterflies and Moths from Natal, containing some fine species of Charaxes and Saturnia, together with a number of figures executed in photo-chromo-lithography, representing their larvæ, and the plants on which they feed, in their natural colours. This is the first instance of the application of this novel process to the delineation of living insects. Also a series of curious insects from the north of Borneo. Mr. Meek exhibited a specimen of Nyssia lapponaria, a Geometer new to these islands, taken at Rannoch, Perthshire; and Mr. Champion, Scydmænus rufus, a small Beetle, also new to England, from Richmond Park. The Rev. Mr. Murray exhibited a variety of Polyommatus Eurydice, also a number of drawings of Indian Moths, executed in India by his brother. Mr. Percy Bicknell exhibited a number of specimens of different English Moths and Butterflies, remarkable for their diminutive size; also Odonestis potatorea, male, very pale-coloured, a very dark female of the same species, and a singular specimen of Gonepteryx Rhamni, male, with blotches of blood-red colour placed irregularly on the wings. He had taken it alive in this condition on the 17th of March. Mr. Jansen suggested that the change of colour might be due to some chemical action, instancing the case of some yellow Beetles from Nicaragua placed in sawdust moistened with cyanide of potassium, which had turned red.

Mr. MacLachlan exhibited a small female elephant's tusk from India, portions of which, near the base, were found, on the dead animal being examined, to have been eroded, and having a large number of the eggs of some insect (possibly those of a blow fly) deposited in regular rows in patches upon the diseased part. He considered the erosion to have been the result of some inflammatory action, and not the work of the insects in question. Some conversation took place relative to a recent statement in the *Times* and other journals, in which two "storms" of insects were reported to have fallen at Bath, especially on the platform of the railway, in which some vagnely described insects were affirmed to have fallen in numbers. It was suggested that these might possibly have been the curious Crustacean, named Branchipus stagnalis, taken up from neighbouring standing pools of water by a whirlwind.

Mr. Lewis exhibited a circular earthenware vessel, very porous, and having a very thick bottom, employed in Pekin for keeping "fighting beetles" in a living state. Mr. Stainton exhibited a number of beautiful drawings of leaves of different plants, with the burrows of different small moths, &c., executed at Santa Martha, in South America, by the Baron Von Nolken.

Mr. MacLachlan stated that M. Candeze, of Liege, had undertaken the completion of Lacordaire's work on the Longicorn Beetles, and that the Chrysomelidæ, in the same series, were in the hands of M. Chapuis.

Mr. Albert Müller gave an account of a new kind of gall found upon common Fern (the first instance of that tribe of plants being thus affected), and which appeared to have been produced by Diastrophus Rubi.

The following memoirs were read:—1, Descriptions of some new exotic Longicorn Beetles, by Mr. Bates (amongst which was a species remarkable for its very short antennæ, with the fourth joint singularly swollen). 2, Descriptions of some new exotic Lucanidæ (Stag Beetles), by Professor Westwood. 3, On the synonymes of the French Lepidoptera described by Fourcroy and Geoffroy, by Mr. Kirby. Mr. Lewis called attention to the fact that the Moth produced from the very destructive "army worm" of the United States has occurred in this country, being the caterpillar of Noctua unipuncta of Haworth, Leucanea extrema of recent authors.

SOME PREDATORY INSECTS OF OUR GARDENS.—No. 8.

Said a friend to me one day, while we were strolling in a garden, "Here, look at these *ants*, the gardeners call them pests, and they do seem to run about a great deal over the plants, but there's a lot of them eating up the green blight, so that's doing some good, at any rate." "My good friend," I answered, "do not be too certain. Examine them again, and I will give you a sovereign for every aphis you find which has been killed by an ant. Busy enough are they about the 'blight,' certainly; yet their intentions are not hostile. The object of their pursuit is a peculiar fluid ejected by the aphides (some people call it honeydew), which is grateful to their palates; and there is as great a difference between seeking aphis 'milk,' and devouring the producers of it, as there is between eating a cook and feasting on a pudding which that cook has made."

No, on all grounds I maintain that horticulturists have a full justification when they include the ant amongst their insect enemies. Why, the case is very black indeed. Ants not only do mischief themselves, but they bestow an apparently needless amount of attention upon a species, or rather a number of species, of smaller insects so prolific and so injurious as to have had the appellation "blight" especially handed over to them; for it is a fact unquestionable, that ants have been observed carefully removing the eggs of aphides from one place to another, and watching over the progeny of these—not from pure benevolence, of course, but with an idea of ulterior advantages obtainable from what have been fancifully called their milch cows A recent instance of this is given in one of our natural history journals. Around some plants which had recently been potted a colony of ants assembled, and raised a structure of earth around them, bringing down to the lower part of the stems which were thus concealed the aphides which had been before dispersed on the leaves and twigs. Moreover, ants are actual transgressors themselves. They haunt our garden fruit in troops during autumn, making havoc amongst Peaches, Pears, and Plums; also, they do not hesitate to nibble away the petals of various flowers, and thereby disfigure them, or attacking the buds ere they have expanded, prevent their development. In fact, on plants, shrubs, and trees they wander at will, using their jaws on whatever may happen to attract them. Just at this season I see them sometimes swarming in parties upon Vines trained on or near houses, being, doubtless, congregated for an unlawful purpose.

On the other hand, I must grant that ants do destroy certain insects which are also injurious in gardens. They seize and carry off caterpillars; in their researches under ground they come across occasionally the pupæ of Lepidopterous insects, and these they will eat, especially if soft. Moths, too, do not always escape, when they are settled down in a half-torpid state during the day, or in cold weather; the fat-bodied species being preferred. I noticed once a score or so surrounding an Ermine moth (A. lubricipeda), which seemed in a comatose condition. Had they been left unmolested the ants would have removed it to their hill; as it was, the moth was removed, but died shortly, having been fatally wounded by them. Flies, too, which have been partly disabled by some accident, are carried off by ants, and occasionally such hard-cased insects as beetles. Possibly, also, juvenile centipedes are seized by them, though I saw a party worsted in an assault upon an adult individual of that sort. Had our British ants the same habits as are recorded of a certain Brazilian species, they might put in a claim to the gardener's consideration, on the plea that they work at the same pursuit—viz., cultivating the ground. This species Dr. Lincecun watched for twelve years ere he

reported its proceedings to the world. Selecting a suitable plot near the nest, the ant clears it of all obstructions, levels it, and sows it with the seed of a grain-bearing grass. This produces a crop, which is kept weeded, and when ripe reaped by the ant, carried off, chaff and all, finally threshed, and packed away in granaries. Let it be added, however, that this narrative has not received credit with all entomologists.

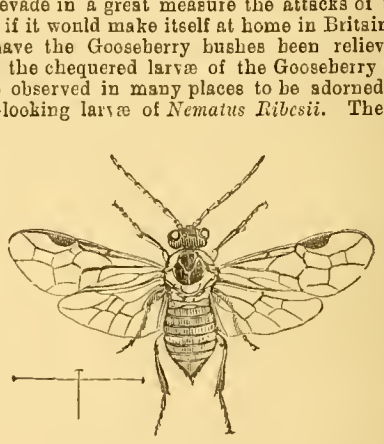
Our own ants, we might say, do so far resemble the gardener that they dig up the earth and turn it over. Their object in so doing is of course the formation of the nest or hill, which may be either temporary or permanent. In this retreat ants usually remain during the winter, solacing themselves, perhaps, with the milk of some aphides they may have in hiding. Early in the spring, however, they come forth and begin to air their pupæ, commonly called ants' eggs. By this time ants have come into full activity, and have three principal objects before them—namely, the obtaining of food for themselves and the young brood, a matter of primary importance; secondly, they are largely occupied in tending this same brood, bringing it through the larval and pupal stages to anthood; and lastly, a certain part are told off to act as masons, and these, working mostly at night or when the weather is damp, are busy in carrying about pellets of earth, altering old chambers and making new ones. The yellow ant, it is said, employs, in addition to earth, sawdust and spider's web. *En passant* let us note it is often a matter of some difficulty to discover where the nest or nests are situated in a garden, for the ants make many cross tracks and byepaths, nor do they drag off to the nest all the objects which they lay hold of.

The two species most common in gardens are the black ant (Formica nigra), and the yellow ant (F. flava); the presence of other species is rather unusual. In cultivated ground which touches upon woods the large ant, known as the horse or wood ant, is to be seen now and then. About London our usual garden species is the black ant, and some interesting facts in its economy have been recently pointed out by Mr. Elwin. Kept in a formicary the black ants are remarkably scrupulous as to cleanliness, removing all useless débris and the remains of dead insects, fragments of meat, &c., very thoroughly. Their strength and dexterity, as already described by authors, were proved to be remarkable. Mr. Elwin saw a single ant carry the entire abdomen of a wasp soaked with water; and yet, he adds, "In spite of their strength their tread must be wonderfully light, since they will walk heavily burdened up a crumbly and perpendicular shaft without displacing a grain, whereas, if I touched it ever so lightly myself it would crumble in." Ants are very careful to keep quite clear the various entrances which lead to their tunnels, and Mr. Elwin noticed that they would even remove from these small lumps of earth, which, though not in actual proximity to the openings, were near enough to be in danger of being pushed over them. Also when they carry off earth which they do not need from their tunnels they take it to some distance, and usually pat it down with their antennæ. It seems, with regard to food, that ants will take at one time what they reject at another, nor will they live long on either animal or vegetable food alone. Though Mr. Elwin found that ants never meet without crossing antennæ, he thinks that Huber was mistaken in supposing that they thus caressed the bodies of their dead companions. Not only, says he, do they act the cannibal upon dead ants, but they will even sometimes drag living ants which are sickly down the provision-hole.

Amongst the winged creatures which appear in the September sunshine are male and female ants, scarcely identified as such by many entomologists. Of these the females have the stronger and larger wings, and survive their male companions, scattering abroad in different directions to found new colonies, or returning to the same nest to deposit eggs. Their wings, for which they have no further occasion, they strip off themselves, or are deprived of them by the workers.

But ere we take leave of the garden ant it is necessary to consider how its attacks upon the produce of our gardens can be warded off, and also how the insect can be destroyed, either during its excursions, or, more effectually still, by eradicating it from its haunts. A variety of methods have been tried, some very complicated, and, as is often the case, the simplest plans prove the best. To keep ants off trees it has been recommended to have the earth constantly dug up, and sawdust, coal ashes, and other matters of a nature repulsive to ants applied to the roots. There is a practical difficulty in carrying this out in many gardens which is against it, even were it more efficacious than it really is. So also the practice of drawing a line of tar round the trunks, though an effective check to the upward march of ants, is occasionally injurious to the trees. A more successful compound which has been tried in the midland counties is formed of one ounce of flowers of sulphur mixed into two pints of train oil. This was used freely upon walls, and also applied in the autumn to the trees most attacked by ants. To snare or poison ants such things have been used as bread crumbs mixed with sugar and white precipitate of mercury; also solutions of lime, salt, and aloes have been poured in along their tracks. The bait which Mr. Newman recommends for entrapping the house ant would no doubt secure quantities of garden ants also. It is thus made: Pieces of string are boiled in a mixture of moist sugar and beer, and then laid in positions where the ants will discover them. Sweet compounds are so pleasing to them, that the intelligence communicated from one to another ere long brings a host to the spot, and the strings when thick with them are taken up and plunged into boiling water. During the colder months, with few exceptions, the ants lie quietly in their nests or hills, and should be dug up when discovered, but not on a warm day, otherwise a good portion will escape unharmed. It has been recommended to dig up the nest entire, and turn it over, with as little disturbance as possible, then the ants remaining in it are destroyed by the cold or wet weather. Soot is also sometimes sprinkled freely about the hills, or the ground near them soaked well with a wash made by boiling rain water with black soap and sulphur. Much has been said of late about the naturalisation in these islands of exotic animals; would it be worth while to introduce a number of ant-eaters and give them the run of our gardens? Ant ingenuity, however, would probably contrive to evade in a great measure the attacks of this quadruped, even if it would make itself at home in Britain.

Hardly have the Gooseberry bushes been relieved of the presence of the chequered larvæ of the Gooseberry Moth, ere they will be observed in many places to be adorned with the unpleasant-looking larvæ of *Nematus Ribesii*. Their groups,



Nematus Ribesii.

rendered conspicuous by the habit they have of raising the hinder extremities of their bodies in the air, frequently do not fall within the gardener's cognisance until May; but, though by hand-picking quantities of them may be then destroyed, it is better to seek out the eggs. These objects, which look like tiny beads, are laid very evenly along the ribs of the leaves, and they may be detected without much trouble about the middle of April. A judicious turning-over of the earth early in the year will expose the chrysalis, which is buried a few inches beneath the soil, and the appearance of part of the first brood of flies thus prevented. When the weather is favourable these larvæ grow with great rapidity, though I believe the statement is incorrect that they will feed up sometimes in ten or twelve days. Two broods at least occur each year, some say more; and though most partial to the Gooseberry, they have no objection at all to the flavour of Currant leaves. By juvenile collectors of insects not as yet "up to snuff" these and other Saw-fly larvæ are carried off under the supposition that they will turn out to be the caterpillars of butterflies or moths. They may be at once distinguished by counting the feet, which never exceed sixteen in the Lepidopterous order—*i.e.*, six legs and ten "claspers" in modern phrase.—J. R. S. C.

Violets.—I supplement my series of Violets sent a few weeks back with blooms of V. californica. It is a handsome sort with no scent, deciduous, and quite hardy. As to the complaint of shortness of stalk, you will see by the specimens sent that no complaint can be made of this variety. [The length of the stalk of the leaf was 11 inches, and of the flower 10 inches.]

I placed the V. odorata pendula, of New York, among the singles; it was an error, the variety is a double one.—A. R.

ROMAN AND DOUBLE PINK VIOLETS.

A GREAT deal of useful information has been given lately about Violets, but no one has spoken of Roman Violets or of the Double Pink. I brought some of the former from the ruins of Caracalla's Baths in Rome about twenty years ago, and have found them answer perfectly, producing masses of flowers in March and April. They are excessively sweet, of a much darker blue than the Russian; the flowers grow on slight round stalks well above the leaves. They only require to be planted in a border where they may be allowed to run and take care of themselves, as they do not like being moved or divided. The Double Pink Violets I think lovely, and they quite repay the trouble of moving occasionally to fresh beds and dividing, which like many others they require. Their leaves are very apt to be variegated with white veins when not attended to, or in very dry weather.—E. ST. J.

EDWARDSIA MICROPHYLLA.

NOTWITHSTANDING the severe winter we have passed through, a plant of this shrub growing against a south-west wall has more flowers upon it than I have known before, although it did not receive the least protection and is fully exposed to the weather—growing, in fact, against the rounded corner of a building. I attribute its flowering well this season to the dry situation it occupies and its wood being well ripened last summer, for it seems to have suffered much less than Ceanothus papillosus on one side of it and a Myrtle on the other, both of which are very much injured, especially the latter.

The singular beauty of the flowers of this Edwardsia entitles it to more attention, for individually they are much larger than those of most of the Leguminous order, to which it belongs, while the neatness of its foliage is also in its favour. As a flowering plant I hardly suppose that it will ever be made to present a sufficient quantity of bloom to render it a favourite with the plant-exhibitor, but in a favoured place against a south wall it deserves a site. It certainly never has so gorgeous an appearance as Clianthus puniceus, but is assuredly hardier than that plant, and its bright yellow bloom contrasts strongly with the clusters of crimson on the Clianthus. Both plants do better out of doors than in-doors when a favourable position can be found for them; and as the Edwardsia has passed through the past winter scathless, I would advise its being tried in other places.—J. ROBSON.

VEGETABLE PROTECTIVE RESEMBLANCES.

I MUST own that I prefer the use of the general term "protective resemblance" to the special term "mimicry," as the latter seems to imply a certain amount of intelligent volition, which in the instances cited by Messrs. Wallace, Bates, and Trimen, I believe does not apply, whereas there are, I believe, cases where instinct does come into play, not acting physiologically as Mr. Bennett would seem to assert, but in the construction of disguises.

Protective resemblances appear to me to be capable of being roughly classed as general and special, though both run into each other. Of general resemblances there are so many that I hardly think it worth while to enumerate instances, I shall therefore confine myself to some examples of special protective resemblances which I have noted.

As to plants I believe protective or useful resemblances are far commoner than some writers seem to think.

That excellent observer Dr. Burchell, in his "Travels," vol. i, p. 10, remarks:—"On picking up from the stony ground what was supposed a curiously shaped pebble, it proved to be a plant, and an additional new species to the tribe of Mesembryanthemum, but in colour and appearance bore the closest resemblance to the stones between which it was growing. On the same ground was found a species of the Gryllus tribe amongst the stones, and so exactly like them in colour and *even in shape* that it could never have been discovered had it not been observed just at a moment when in motion, and as if more completely to elude notice it seldom stirred, and even then but slowly.

"The intention of Nature in these instances seems to have been the same as when she gave to the chameleon the power of accommodating its colour in a certain degree to that of the object nearest it, in order to compensate for the deficiency of its locomotive powers. By their form and colour, this insect may pass unobserved by those birds, which otherwise would soon extirpate a species so little able to elude its pursuers, and this juicy little Mesembryanthemum may generally escape the notice of cattle and wild animals."

I may here remark that a great number of Karoo plants have tuberous roots of similar form and colour, and it is especially curious to notice that, amongst the Asclepiadeæ, many species, such as Raphionueme, which are found in the grassy country, have their tubers hidden beneath the soil, whilst others, which occur in the stony Karoo, such as Brachystelma filiforme, have them above the soil, and so perfectly do they resemble the stones amongst which they are found, that, when not in leaf, it is almost impossible to distinguish them.

Of imitating plants I may mention Ajuga ophrydis, the only species of the genus in South Africa, which bears a striking resemblance to an Orchid, as also does Impatiens capensis, another solitary species. I mention these especially because they are very striking, although I am not aware that they are in any way specially useful, noting, however, that the latter plant is much frequented by insects, often by similar species to those which frequent Angræcum and Mystacidium, plants affecting similar localities.

I would remark how long it often is before frugivorous birds discover fruit not indigenous to the country.

In the drought of 1865 I was much struck by this. We had a solitary Damson tree, which had not previously borne much fruit, but which that year had abundance. The mousebirds (Coleus) and the Red-wing (Inids maria) had devoured the Almond and Peach blossoms and the Figs. With two double-barrelled guns we could not keep them from the latter. Meanwhile the Damson tree was never touched, but ripened its fruit beautifully. On the morning of Christmas Day my friend intended taking them to his sister-in-law. Two hours later there was not a Damson on the tree; the birds had just found them out, and had strewn the ground with their stones.—J. P. MANSEL WEALE, *Brooklyn, near King William's Town, Kaffraria.* —(*Nature.*)

NOTES AND GLEANINGS.

WE have received from Messrs. Rivers, of Sawbridgeworth, flowers of PÆONIA WITTMANNIANA, a species of this highly ornamental genus, which we believe to be little known and not much in cultivation. It is remarkable as being a yellow Pæony, and although smaller in the flower than the other species usually found in gardens, and single, it is nevertheless a pretty and interesting plant. This is one of the very numerous plants first received in the country by the Horticultural Society, of which now there is no trace in the garden. It came from Mr. Hartwiss, Director of the Nitika Garden in the Crimea, and was discovered by Mr. Wittmann in the Taurian Caucasus.

—— MESSRS. SUTTON & SONS, Seedsmen to the Queen, Reading, will have their Annual ROOT SHOW, at Reading, on Saturday, November 18th. This show, which is open to the United Kingdom, was established by, and has been conducted solely at the expense of Messrs. Sutton, and is one of the largest in the kingdom. Upwards of £70 are offered this year for the best specimens of Swedes, Turnips, Kohl Rabi, Mangel, Potatoes, &c., including no less than 20 guineas in plate and money for twenty-four specimens of Suttons' Improved Champion Swede; and a £5 5*s.* cup is given by Messrs. Griffin, of Wolverhampton, for the best collection of roots. Full particulars may be had on application to Messrs. Sutton & Sons.

CRYSTAL PALACE.—The additions to the permanent departments have been during the past year principally in regard to natural history. The science of marine zoology is to be exemplified, and means for the proper exhibition of living animals in their natural condition have been provided. The most complete aquarium that has ever been constructed on scientific principles is prepared, and will shortly be opened. It is in a special building 300 feet long and 50 feet wide. There are sixty tanks in all, supplied constantly with fresh sea water, of which 700 tons (150,000 gallons) are used for the purpose. The largest tank has a capacity of 4000 gallons. In these receptacles the natural conditions of the bottom of the sea are to be reproduced, and a practically unknown wondrous world of life will be open to our inspection, as it has never been before.

A Rose show will be held on June 24th. A show of dogs is

to open on the 2nd of June, and will last four days; while the 13th of July has been appointed for a cat show, and it will be the first that has ever been held. We are so apt to joke about cats, that most of us forget, or are ignorant of, what interesting and beautiful varieties of the animal are known and domiciled in this country. These, although of high value, have never been brought together for exhibition, as the dogs have. There are, besides, to be shows of poultry, singing and cage birds, and Pigeons. Of these last-named there is to be an especially interesting exhibition. On the 26th of June there will be a great Pigeon Concours, after the continental fashion, when one thousand Pigeons, of the true homing varieties, will be liberated to race for prizes to various stations in Belgium. These will be of the same breed as the messengers employed during the Franco-German war—many will be the identical birds. They are not what we call Carriers; the English Carrier is a fancy breed, and is, indeed, misnamed, for he can seldom or never be used properly for the service of conveying messages.

SOBRALIA MACRANTHA, VAR. ALBIDA.

The plant we have the pleasure to figure for the first time was exhibited a few weeks ago at the Royal Horticultural Society's garden, South Kensington, by Mr. B. S. Williams, of the Victoria Nursery, Upper Holloway. It is at once a very rare and beautiful variety of the well-known Sobralia macrantha. The reed-like stems and leaves very much resemble those of some species of Panicum — more so than the growth of an Orchidaceous plant. The stems are some 3 or 4 feet in height, and very slender, producing upon the ends of the shoots, when they are mature, numerous large flowers, which measure upwards of 6 inches in diameter. The sepals and petals are of a soft creamy or French white; the lip is very large and spreading, of a uniform, soft, rich purple, which contrasts beautifully with the pale-coloured sepals and petals. From its distinctness and delicate beauty this plant is worthy of a place in every collection of Orchidaceous plants.

The genus Sobralia, unfortunately, is to a great extent neglected by the majority of amateur growers of Orchids—a fact which is much to be regretted, for although it cannot be denied that the individual flowers are very fugacious, yet the quantity produced, and the soft and beautiful colours of the blooms, make ample compensation for its short-lived properties.

Sobralias are all terrestrial plants, destitute of pseudo-bulbs, and are characterised by slender reed-like stems, bearing dark green, plaited, acuminate leaves. They should be potted in rough peat, sphagnum moss, and good leaf mould and sand, to which may be added a little sound turfy loam. In potting let the drainage be good, but the plants should not be elevated above the rim of the pot, as is practised for epiphytal species of this order. The best place to grow them is the cool end of the Cattleya house. At all seasons a liberal supply of water is essential to their well-being, but in winter much less will suffice than is necessary during the period of growth and flower. As far as I am aware all are natives of South America and the West Indian Islands.—EXPERTO CREDE.

WORK FOR THE WEEK.

KITCHEN GARDEN.

EVERY spare piece of ground must now be trenched-up in readiness for planting *Brussels Sprouts* and early *Savoys*. The detached leaves from *Cabbage* beds in bearing should be removed and trenched-in, not left to wither and rot amongst growing crops, forming a harbour for slugs and other vermin. *Asparagus* beds are likely to meet with a severe cutting this year on account of the lateness of other vegetables, and should, therefore, be liberally supplied with stimulants in the shape of liquid manure and salt. The cutting, however, must be gradually lessened. Keep the beds free from weeds, and discontinue entirely the cutting of young beds. A few drills of *Cape Broccoli* may be sown in light rich soil, to be thinned out and kept standing. The trenches which have been prepared for early *Celery* should now be planted without delay; lift the plants from the nursery bed with a good ball of earth, plant them at a foot apart, using a trowel or small fork in preference to a dibble, and give them a liberal supply of water, and after they have started into growth plenty of liquid manure poured upon the soil from the spout of a watering-pot without the rose. If from drought the tops require freshening, a sprinkling of pure water is best. Prick-out late-sown Celery, and keep all young advancing crops well supplied with water. Thin-out young seedling *Cucumbers* and *Vegetable Marrows* on ridges, and see that transplanted ones do not want for water; tilt the glasses for the admission of air, and shut down close in the evening. Liberal applications of liquid manure must be kept up to *Cauliflowers* in order to have them fine. Continue all

regular and short intervals to tie-up *Lettuces* for blanching, and thin-out all advancing crops of the varieties of Cabbage *Lettuce*, which are always best left to perfect themselves where sown; and if small sowings are kept up at short intervals transplanting will be superfluous. Continue to keep the surface well forked-up amongst the growing crops of *Peas* and *Beans*. This is at all times attended with the most beneficial results, as it increases their productiveness, and by keeping them in a vigorous-growing state assists greatly to ward off the injurious effects of mildew, which too often attacks the late-sown ones. This may be accounted for on the supposition that pulverising the soil, besides exposing it more to atmospheric influence, has a great effect in retaining moisture about the roots during the dry weather, which, together with hardness of surface, is generally supposed to be favourable to the production of mildew. If this begins to show itself a very weak solution of salt and water sprinkled over the tops will check its progress. Keep up successional sowings of *Radishes*, *Lettuces*, and *Salads*, which require to be sown often now in quantities proportioned to the demand; the north side of a sloping bank is the best situation for these sowings; let those who doubt it try, and they will soon be convinced. Continue to make successional sowing of *Turnips*, and dress both these and other crops likely to be infested with the fly with charcoal dust when they are in a wet state.

FRUIT GARDEN.

Great activity must now be exercised in this department, as the rapid growth of the trees will require constant attention in stopping superfluous shoots and nailing-in. Peaches may now have their final disbudding. Let every shoot not required be removed with a sharp knife and the remainder be carefully nailed-in; if any of the extreme shoots are getting out of bounds they may be stopped within a few joints of the base in order to preserve the fruit, but take care to train-up another shoot to succeed. Give the fruit another moderate thinning, but leave more than will eventually be required, as a portion will certainly fall off in stoning. Apricots must be thinned with the same discretion. Keep the lateral shoots of Vines closely stopped at the first joint. The practice of removing them entirely is objectionable, as nature does nothing in vain, and, doubtless, they were placed there for some good purpose; by retaining a joint we preserve them for whatever purpose they may serve in the economy of the Vine. We should always endeavour to assist the operations of nature as well as judiciously check over-luxuriance, and in this respect there is no tree more tractable than the Vine.

FLOWER GARDEN.

Recently transplanted shrubs and trees must be carefully attended to with water until they become fairly established. It is frequently the case, however, that too much water is given at the roots, thereby souring the soil and rendering it uncongenial to the young rootlets and the aftergrowth of the plants. The soil should be kept moist, but not to saturation, and the plants should be watered overhead with the engine on the evenings of bright days; water thus given will be of more service in repairing the loss sustained by evaporation than if given in excess while there is a deficiency of active rootlets to absorb it. Where Roses are infested with the grub, it will be necessary to go over the plants frequently to destroy this pest. Green fly is also sometimes very troublesome at this season; a good washing with the garden engine on two or three successive evenings will greatly assist in clearing the trees of these destructive vermin. With wind north and north-east and a fair prospect of a sharp frost any night, there is no temptation to commence bedding-out in earnest. It is to be hoped, however, that we shall have experienced a favourable change before the appearance of this notice, and that the planting of all properly-prepared stock may be proceeding under favourable conditions. Branches of evergreens are easily enough obtained about most places, and a sprinkling of these stuck into the beds after planting will be of great service in protecting the plants from the drying effects of bright sun, &c., and will also ward-off a degree of frost which to unprotected plants would be destructive. All shoots which are long enough to be injured by being blown about by the wind should be pegged-down immediately on planting out. A good watering should be given to the beds to settle the soil about the roots; this, however, will be better done in the morning, if there be any reason to fear frost.

GREENHOUSE AND CONSERVATORY.

As the New Holland plants go out of bloom the seed-pods should be picked off, the shoots cut back and arranged in the form most favourable to secure a compact growth, placing them in any airy part of the greenhouse until they fairly start into growth. When the buds have fairly started will be the time for shifting such as require more pot room, as they can then be kept somewhat close for a fortnight to encourage a free root-action, without incurring the risk of the buds breaking scantily. Some plants, as Boronias, Leschenaultias, Eriostemons, &c., would now be best in a frame or pit, where, while they have free ventilation, they could be protected from chilling draughts. Syringe the young plants occasionally, and sprinkle the vacant parts so as to preserve a moist growing atmosphere.

STOVE.

Many of the climbers in this house will now be growing rapidly, and some of them will be showing bloom, especially the Stephanotis and Allamandas; if room can be spared to prevent the plants becoming entangled, it is not advisable to train them too soon, or possibly some of the flowers may prove blind. The most forward of the Clerodendrons will now be showing their bloom panicles; encourage them as much as possible by a brisk bottom heat and plenty of manure water, and guard against red spider and insects of all kinds. Rondeletias, Ixoras, Gloriosas, and the like must also be encouraged in a similar manner, as must all young growing specimens. Ventilate freely both by night and day, and keep a moist growing atmosphere. Plants for winter-blooming must be attended to, and Gloxinias, Achimenes, &c., may, as they come into bloom, be removed to a cooler house. Look to successional crops of these, especially of the old Achimenes coccinea.—W. KEANE.

DOINGS OF THE LAST WEEK.

A GREAT week of work, and yet not much to write about. After the frost and snow of the morning of the 17th the weather on the whole has been milder, and we exposed all our bedding plants to the rain of the following days. Potatoes, Beans, Peas, &c., have suffered considerably in some places in the neighbourhood, and still more farther north. A visitor told us that in Yorkshire even the Cabbages held down their heads, and the Potatoes in his little garden, which were very forward, were much blackened. In our rather elevated position we have suffered but little, but, rather singularly, in a good many spots the hardy male Fern has been touched at the points before the expansion of the fronds.

KITCHEN GARDEN.

Potatoes, so far as we have noticed, have been unusually good this season, and we have seen no signs of the disease. The earliest outside are strong and healthy, and if we have no severe May frosts, there will be an early return of tubers on sloping banks, and even on flat borders. Our ground being very limited, we plant now only for early supply. We have got through a good part of our early Potatoes, have a portion still left, fully ripened and nice tubers, and a fair piece in an earth pit covered with old sashes at night, and exposed in favourable days, with the tubers about half-grown, and we thought we were doing pretty well. As the single feather in the air tells the direction of the wind, so the healthiness, ripeness, and freedom from spots of our Potatoes under glass gave us grateful anticipations of what we might expect the great open-air crops to be in these islands. A month ago we saw in Luton fine-looking Potatoes, round in shape, selling at 9*d.* a punnetful, quite enough for a treat for a small family. These we found came from the Channel Islands. We have known them come even considerably earlier to our country towns from the South of France and the northern coast of Africa. Thanks, therefore, to quick transit, the artisan in our towns can, as respects many early vegetables, follow very quickly in the footsteps of our landed gentry. As a mere matter of commerce it would be useless to force Rhubarb, except in the earliest part of the winter. In the midland and even the northern counties we have seen on the stalls nice, though short, bunches of Rhubarb from Cornwall and Devonshire, when ours was just beginning to show above ground; we could not have sent to market such Potatoes as those referred to at such a time and at such a price. The climate of the Channel Islands and the quick transit would beat us.

We make a passing allusion to this subject, because when recently advocating larger kitchen gardens, or at least vegetable grounds, and less of lawns, some gentlemen have said, "Why, in many cases we could buy vegetables cheaper than we can grow them." As to such early vegetables, we concede the fact

where markets are close at hand and there is steam or railway transit. We can produce the results of any climate; but we cannot in point of economy and earliness compete with more sunny and southern latitudes. The conclusion of the matter in our opinion is just this, that the possessors of gardens close to market towns north of London may often find it more economical to purchase early productions than to grow them. If they are several miles from such marts the expense of going and coming must be taken into account. Then to this must be added the great value of freshness and perfection. Those Potatoes on the stall looked very well. Our practised eye could see at once that when cooked they would be waxy and sticky, destitute of the rich flavour of a fully ripened floury tuber just taken out of the soil, and which, instead of sticking, would be almost melting in the mouth. Still, the Potatoes referred to would be new, even if in quality they were inferior to good old Potatoes. Change in such matters is ever desirable, and the hardworking man appreciates such a change even more than those who are ever seeking after some new enjoyment. We should be sorry if rapidity of transit should in the case of the possessors of gardens lead them partially to lose the sense and relish of what is really the best. Last year a gentleman told us that his Peas were all eaten by vermin, and he had resolved to grow no more, lay part of his garden in fallow, and send to —— only five miles off, and get a few pecks or bushels as wanted. He did so last year, and heard no complaints as to quality; he was not much of a judge, and cared nothing or little about Peas. This again is just a case in point. There must be a perfect want of the sense of taste if a man can partake with equal relish of Peas that have been bagged and sent to market, exposed on a stall, and bagged or basketed again before being shelled, and those which have been carefully picked a short time before they are boiled.

Kidney Beans.—Our first sowings out of doors are a failure. The seed, though treated with every care, has rotted as it swelled, entirely owing, we believe, to the want of sufficient heat. As soon as we found this to be the case we sowed in 6-inch pots, five or six beans in each, and plunged them in a mild hotbed. When duly hardened off we shall plant them out, balls and all, disturbing them but little. It was no fault of the seed, as that came up without a miss in a little heat. Several similar cases have occurred from sowing rather early, and the seed has been blamed when cold and wet were the causes of failure. Had the first two weeks of May been warmer and drier, the seedlings would have been right enough. Scarlet Runners have stood the early sowing better, and are peeping through, and those not doing so are safe. The weather, however, has been cold enough for them; in fact, as yet we have had the months of April and May reversed, and we shall not be in too great haste to turn tender plants out of doors. Bedded plants and Dahlias early planted have been injured in some places as much as the Potatoes, and though they may recover, it is as well that such checks should not be experienced.

Watering and Mulching.—We found that our earliest Peas out of doors were rather at a standstill, but we disliked the idea of watering them, Roses, &c., until the ground should be warmer. The weather being milder, we soaked the rows with house sewage, as from suds and dish-washings, which in the spring and autumn months are always warmer than the open air water. Gave also a watering to the earliest Cabbages, for we want them in, as they are later than usual, even the earliest of them, having lost the most of those planted in the autumn. These, as well as the Peas, had the surface soil forked over previously, as the rains had rather baked the surface, and where free growth is concerned an open surface is all-important. The Potatoes at the foot of walls, and which had become dry from the rains not touching them, have done wonders since they were watered with sewage slightly warmed. When fully exposed we should never think of watering Potatoes. In dry seasons, however, they are the better of earthing-up; it helps to keep more moisture about the roots. We never had finer Potatoes than last season, and yet the fibres must have searched far for moisture, as the tubers seemed as if they had been gathered from mounds of dry ashes. The earliest spring Cauliflowers were also well watered, and to keep the moisture in, earth was drawn with a hoe to the stems, so as to leave a hollow all the way for future watering if necessary. If the weather should continue dry we shall mulch all such crops with half-decayed dung, or anything we can find, to save watering, and when plants are well established this often answers better than frequent watering.

But for appearance's *surface manuring* has advantages of its own. The manure will not yield the luxuriance of growth that it would do when mingled with the soil, but it will give greater sweetness and richness even to the best vegetables; and as for fruit and flowers, there can be no doubt of the value of manure on the surface, instead of incorporating the manure with the soil. A farmer, with whom we had an argument once about leaving his rather strawy manure to be dried on the field like so many haycocks before ploughing it down for Turnips, thought he had us at an advantage when he saw rather rotten manure exposed on the surface of a flower bed to become thoroughly sweetened before it was pricked in shallow. But the objects aimed at were quite different—rapid and luxuriant growth in the case of the Turnip, moderate growth and free-blooming in the case of the flower bed. Without noting chemical principles, there can be little doubt as to the fact that all manures of vegetable or animal origin tell most on free-blooming when presented in a sweet state, and within free reach of atmospheric influences.

With all our progress we have yet much to learn as to watering, manuring, and surface-mulching. Many a plant out of doors and in-doors is watered out of existence. Mulching with litter or dung will help to keep roots warm in winter, but if left on in the warm days of spring and early summer it will just have the opposite effect of keeping the soil cool: hence for even vegetables, and especially for flower beds, it is important that the soil be warmed before mulching is freely resorted to, as when applied it not only helps to keep moisture in, but also to keep heat out.

Then as to the effects of manure in a rather fresh rank state, and similar manure more wasted and decayed, but nicely sweetened, anyone may convince himself by just trying two rows of Celery differently treated. If we desired huge plants rather than sweetness and crispness, we would give a good depth of strong rather fresh manure, with 8 inches of more rotten manure and soil on the top. Were less free growth and sweetness of flavour the object, we would [illegible] from 6 to 9 inches of well-sweetened decayed hotbed dung, with about an equal amount of soil.

As we have nothing but tanks now to depend upon, our main pond being dry, we shall not be in a hurry in finally transplanting much Celery, as but little water will serve it whilst in the beds in which it was pricked out.

FRUIT DEPARTMENT.

Took the opportunity of a warm morning to give a good engining with water to Apricots and Peaches. The wind shifts so much to north and east, that it would not be prudent to lash the trees late in the afternoon. We used chiefly clear soot water, as it rather nourishes the foliage, and no insects seem much to like it—it is always better to keep them away than to destroy them when they come. Some of the trees have suffered considerably from the frost, but the crop will be very fair. Plums we fear will not come up to our expectation, and the rich profusion of bloom. For days when in bloom the trees were constantly wet, and then frosty nights and cold easterly winds seemed to wrap the petals round the incipient fruit like so many tight indiarubber bands, and instead of swelling, great numbers dropped off. There will on most kinds be a fair crop, but we do not think we shall need much thinning. Apricots, too, are very impatient of constant damp whilst they are in full bloom. With drainage secured it is not easy to hurt them with moisture at the roots. Many trees become unhealthy and ultimately die from dryness at the roots alone. In many places, if fine weather continue, they will rejoice in a good watering.

We watered all the most forward Strawberries out of doors, missing this season the plants which did not show bloom, as they are growing quite strongly enough. In some cases it is easy to detect a fruitful and an unfruitful plant at a distance, the latter is so much more luxuriant. This holds good as respects the plants turned out of pots last season after they had fruited. As already stated, we came to the conclusion that the frost killed the fruit buds. Some pieces are pretty well up to the mark, but as a rule, our crop will not be equal to that of former years.

Peach and Nectarine trees in the orchard house have been watered, and we must begin to thin freely. The trees are loaded with fruit, but they had glorious sunshine when in bloom. We gave a good soaking to trees in the Peach house, the fruit swelling to ripening, using previous to watering a sprinkling of superphosphate on the borders. Weak guano water is also very beneficial after the last swelling is progressing. We have less faith in guano than heretofore, we fear

the old fields are worn out; 1 oz. to the gallon when genuine was enough, a little cow-droppings water helps to give coolness. After all there is nothing much better than water made from the droppings of animals, if allowed to ferment and clear itself previous to use. Employing it so thick so as to leave a crust on soil or pot, keeps out the air, and so far is injurious.

Vineries.—We proceeded with thinning fruit, and tying and regulating the late Vines. Those in the orchard house are showing well, though at first they had only 2 feet of a border, and we have not yet been able to extend it to the walk in front, but we suspect the roots are now among the rubble, and passing under the walk. We have failed every year to proceed with renewing and extending Vine borders by degrees; there has been so much to do. We cannot touch the outside borders at present, as they are a thicket of bedding plants, but we watered in front of the wall plate with warmed manure water to make sure that the roots were not too dry. When the bedding plants are gone we shall move the litter and leaves, so that the sun heat will duly warm the soil, but we shall not do that at once, or in a hurry, as the uncovering of Vine borders which have been kept a little warm, if cold weather ensue, is apt to give a check. As soon as a press of fresh work has been finished we should like to find time and material to renew the Vines by degrees, and then we should be content with finer and much fewer bunches.

ORNAMENTAL DEPARTMENT.

We have nearly finished the pleasure ground changes. Lately we adverted to changes, even as changes, being desirable. It should never be lost sight of, that the very best possible combinations and arrangements at one time, may be anything but the best a number of years afterwards. In a new pleasure ground many things may be introduced as standpoints and for variety, even if somewhat mechanical or merely artistic, that would be better away when shrubs and trees are assuming bold and massive proportions.

In most of the turfing lately done we had the sods soaked before laying them down, and this saves much labour afterwards. All the stretches of fresh turfing now look as if they had been laid down for years, and even as respects management there is a great advantage in filling up every hollow, for ease alike to scythe and machine. Let us hint once more, that a large lawn kept near the mark is a large source of expense.

We have had much potting and moving, and hardening off bedding plants, leaving them exposed in the beds at night, except Coleus, and plants of a similar nature, which still have protection, as we shall not think of turning them out for several weeks; probably about the 23rd we may begin to plant out finally, but a press of other matters has prevented our preparing the ground so well as we like.

We pricked off tender annuals, and fresh potted Ferns, Caladiums, &c., giving the latter strong lumpy loam, with sweet manure and charcoal. Placed Achimenes and Gesneras in good positions.—R. F.

Early Peas.—Mr. G. Green, gardener to the Ven. Archdeacon Fitzgerald, of Charlton Mackerell, Somerset, picked his first dish of Peas on the 10th, although he might have done so on the 8th inst. The sort was Sutton's Ringleader. They were sown in the open air on November 19th, and had but little protection.

TRADE CATALOGUES RECEIVED.

John Harrison, Grange Road, Darlington.—*List of New Roses for* 1871.

James Dickson & Sons, 102, Eastgate Street, and Newton Nurseries, Chester.—*Catalogue of Bedding-out and Border Plants, New Roses, &c.—Supplementary List of Stove and Greenhouse Plants.*

TO CORRESPONDENTS.

*** We request that no one will write privately to any of the correspondents of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By doing so they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely to The Editors of the Journal of Horticulture, &c.*, 171, *Fleet Street, London, E.C.*

N.B.—Many questions must remain unanswered until next week.

Books (*J. M. S. P. T.*).—The "Cottage Gardeners' Dictionary" is 6*s.* 6*d.* and the postage would be 8*d.*

Fruiterers (*W. P.*).—Write to Messrs. Webber, Fruiterers, Central Avenue, Covent Garden Market. In Kelly's "London Directory" you will find a long list.

Pear Leaves Blackened (*T. Barnes*).—It is caused by cold. See an answer March 11th, No. 528, p. 342

Liquid Guano for Roses (*Subscriber*).—We should put from 10 lbs. to 12 lbs. of guano to the 56-gallon cask of water, stirring it well up and allowing it to settle before use. When empty it will not require so much to bring it to the same strength again, as a good portion of the guano is only partially or slowly soluble, and 6 lbs. or 7 lbs. will be enough. Much depends, of course, upon the quality of the guano. Once a-week will be often enough to apply the liquid manure unless the weather should be very dry.

Manetti Rose Stocks (*G. W. H.*).—It is very doubtful if the three-year-old Manetti stocks transplanted in the spring of 1870, will ever be worth budding on. It would be much better to keep them as stock from which to raise cuttings, as the suckers they are now sending up will make strong shoots this summer, and will be very good for making into lengths for cuttings in the autumn of the present year, inserting them about 8 inches apart in rows 3 feet from each other. Make each cutting from 7 to 9 inches long, of the strongest and smoothest part of the suckers. Each sucker will then make two or three good plants for budding in two years' time. Some of the best may be budded where they stand in the following season. The rows of cuttings should be earthed-up like Celery, only leaving the two top eyes out of the ground, and in transplanting the lower eyes ought to be cut out. If the stocks must be budded this season, it would be better to bud on the young suckers, cutting away all the old wood, and if carefully done the suckers may be separated with the bud on them, especially if, after cutting away the old wood, the suckers are earthed-up so as to encourage them to emit roots, in which case if the plants were strong, three or four suckers on each of the Manetti stocks might be budded. This plan would require care and attention, but success would be much more likely than in budding on the old wood, especially as no Roses on the Manetti do well unless they are planted with the junction of the scion and stock at least 2 inches below the ground.

Fungus on Rose Leaves (*J. L. G. and Rose Garden*).—The Rose leaves are injured by the orange fungus; the whole of the leaves are covered with its spores though not visible to the naked eye. The orange patches are the nuclei from which the spores are spreading. It is not necessary to pick off all the affected leaves, but if any are very bad they had better be removed. Syringe the Rose trees with soft-soap water, 2 ozs. to the gallon, and dust sulphur on them while wet. The plants may be syringed with pure water two or three days after the application of the soft soap and sulphur. If the fungus is not destroyed by the first application, try a second.

Yellow Fungus on Roses (*An Old Subscriber*).—You will see an applicable answer in our last number.

Geranium Leaves Spotted (*C. J. S.*).—We are unable to account for the spot on the leaves, otherwise than that it is due to the plants being grown in too rich soil, the watering being excessive, and the atmosphere too close. We think more air and earlier in the day, accompanied with more heat, would set them right.

Variegated Geraniums (*A Constant Subscriber*). — Silver Tricolor Geraniums are Variegated Geraniums. We never saw Silver Tricolors exhibited against Gold Tricolors exclusively.

Compost for Musk, Geraniums, and Calceolarias (*A Subscriber*). —For Musk, two parts light turfy loam and one part of leaf soil and sandy peat in equal proportions, with a free admixture of sharp sand. For Geraniums, two parts light turfy loam and one part leaf soil or old rotten manure, adding sand liberally. For the Calceolarias, two parts fibrous loam, one part leaf soil, and half a part of old cow dung. For seedling plants of the last two the soil must be made very fine, and particularly for Calceolarias, adding fully one-fourth of silver sand. Sow the Calceolaria seed on the surface, just covering with silver sand. We cannot recommend you a book on the management of pigs.

Geranium Leaves Spotted (*G. W.*).—We are unable to account for the spots on the leaves, but consider more heat, less water, and a free sweet soil with abundance of air would set them all right. It is due to the plants in a majority of cases growing freely, and whilst so doing receiving a check. It is very prevalent this season, in a great measure owing to the changeable weather. We do not know where shoots of the Indiarubber plant are sold for grafting or budding.

Black Dots on Geranium and Fuchsia Leaves (*Poplar*).—The small dots on the Geranium and Fuchsia leaves are caused by a small fly, which has been brought into the house with the horse droppings. We know of no means of freeing the leaves of the black dots. They may, however, be removed to some extent by frequent syringing, but most of the dots will only be removed with the leaves.

Apple and Currant Trees (*Amateur*).—The Apple tree leaves are attacked by mildew; the remedy is flowers of sulphur applied by a sulphur-distributor, or by the syringe. In the case of Apple trees, 2 ozs. of soft soap and ½lb. of sulphur being mixed with sufficient warm water to form a thin paste, then add two gallons of water, and with this syringe the trees. The Currant trees also losing their leaves, and the fruit not setting, would lead to the supposition that your garden is not drained, or imperfectly so. This, with the continued cold east winds would lead to the evils you complain of. If the roots have struck into a cold subsoil, root-pruning would be beneficial; this should be done in the autumn, and if practicable add some fresh turfy loam at the same time.

Apricot Trees Gumming and Partly Dead (*A Gardener in Trouble*). —It is not an uncommon occurrence for the branches of Apricot trees to die off in the way stated in your letter. We have known them do so in every stage of their growth, and this season more than usual. We have some trees on a south border, where the border is partially shaded by a wall, but not the trees; and the evil you complain of has troubled us much. Another tree on the gable end of a shed with the same exposure, but where the border is drier and unshaded by a wall, is quite free from it. If the Peach trees were infested with red spider or aphis last season there will be much dead wood this year Another cause is a damp rich border, but as the Peaches on the south aspect are the worst, we should suppose that the hot dry summer of last year had something to do with it. As "all the bottom and middle of the tree" has died, you must replant with young trees. If the trees had not been so badly affected, and if an unsuitable border was the cause, lifting the greater portion of the roots, removing as much as convenient of the old soil, and replacing with pure turfy loam, would have been the remedy. Galvanised wires

make a neat trellis for garden walls; they should be strained horizontally 6 inches apart, and ought to fit closely to the wall; care must be observed that the shoots are not tied too tightly to the wires so that the bark is cut, or they will certainly gum.

Apricot Shoots and Branches Dying (*J. B. W.*).—The branches die off from gum, for which there is no known remedy. It is common to all kinds alike, but especially the Moorpark.

Climber for Intermediate House (*D. M.*).—Cissus discolor would succeed if you were to keep it dry in winter, but we should prefer one of the Passifloras, and as there is a doubt of its flowering, from the shade, we should plant P. trifasciata, which has pretty foliage. Hoya carnosa variegata would also suit.

House for Wintering Bedding Plants (*A Lancashire Subscriber*).—The position of the lean-to fronting the west will do very well for bedding plants. The hardiest Vines would ripen well, as the Black Hamburgh and Royal Muscadine. We would plant them at the back, train them to the top of the wall, and then down the roof. Some five Vines would do, or six if very anxious. If the back wall should be at all warm, then train the stem up 6 inches from the wall. Whether the heat in the chimney and the back room will be sufficient to keep out frost we cannot say without knowing the heat thrown out, but in one case we had a slab of iron 2 feet square put near the stove or fireplace, and that was sufficient. One thing is certain—if this heat should not be sufficient, a small iron stove inside the house near the front would keep all safe. If, instead of Vines, you preferred Cucumbers in summer and had no extra heat, you could grow them successfully only from the middle of June to the end of September.

Mushroom Beds out of Doors (*Mouceron*).—Those made in November we should have expected to hear in general in two months after spawning. Their bearing only a little now we attribute to their being covered thinly with straw, and then old mats thrown over them. We should have liked from 6 to 9 inches of straw in such a winter. The keeping them cool has retarded their bearing; but as they may now come plentifully we would give a little water at about 70° if necessary, and keep a slight covering on, and you may gather a good lot from the beds if the spawn was not injured, and it is not easily injured by dry cold. Now is a good time to make small beds out of doors in a shady place, and we insist on the latter, as the heat of June and July is quite enough for the Mushroom unless there is a little shade. The covering of the beds after the end of this month is chiefly for maintaining uniformity of temperature and moisture. About 60° is the best average. We have never had Mushrooms better in summer than when grown in small ridges under the deep shade of trees, and the ridges covered with a little rough hay to keep them moist and not too warm. We have had quite as good Mushrooms under an open shed with less trouble, only the shed, however rude, added to the first expense.

Pansies for Spring Flowering (*Brambridge*).—If you plant out good strong young plants of these in a warm border close to the sea, we have no doubt they will succeed if they are not exposed to the sea spray. Golden Pyrethrum and Myosotis would also succeed, but they would not do if the salt water reached them. We do not know of an early-spring flowering plant that would endure the sea spray.

Currant Bushes Infested with Aphis (*X. Z., Herts*).—A safe remedy is syringing with a solution of 2 ozs. of soft soap to the gallon of water. The blackening of the shoots cannot be due to aphis, though the insect may have destroyed the growths. Syringe, however, with the soft-soap solution, wetting every part, and choosing a mild calm evening.

Cucumbers Growing in an Unheated House (*W. W. B.*).—With a 2-feet bed of horse droppings fresh from the stable you may grow Cucumbers very well during the summer, taking care to shut up early in the afternoon, in order to husband the sun's heat. We would make up the bed and allow it to heat without covering with more than the sods, and when the heat has risen and is not more than the hand can bear, place on the bed a hillock of soil 1½ inches deep where you intend to plant, and put out a plant on each hillock after the soil has become warmed. As the plants grow you can add more soil, so as to cover the bed with about 1 foot deep of soil. The bed ought to be about 4 feet wide. Water as required, and sprinkle every available surface frequently, especially when shutting up for the day, so as to maintain a moist congenial atmosphere.

Wistaria Stem Decaying (*H. Y. Y.*)—The hole in the stem probably results from some injury. There can be no doubt that it will spread, and we would at once fill it up with clay and cow dung as you propose, and cover the bark 2 or 3 inches beyond the edges of the hole, and we should add more as this composition cracks and falls off. By these means you will probably induce the bark to grow so as to close up the hole in time, but you must have patience.

Compost for Palms (*E. E.*).—Chamærops humilis succeeds in some situations out of doors, and thrives in a greenhouse. Phœnix sylvestris will also succeed in a greenhouse, but is best if not subjected to a lower temperature than 45°. Dasylirion acrotrichum is not a Palm, and succeeds in a greenhouse, but best in a temperature of not less than 45° in winter. For the Palms, use two parts fibrous brown peat, torn up roughly, and one part turfy loam, with half a part silver sand. Good drainage is necessary. The end of April or beginning of May is a good time to repot them. The Dasylirion does well in a compost of two parts fibrous loam, and one part each of sandy peat and old cow dung or well-decayed manure, with a free admixture of sharp sand. The best time to repot is when the plant is beginning to grow, or in April. Repot it at once.

Moss in a Shrubbery (*R. L.*).—It will not do to employ lime that comes from your gasworks for the destruction of moss in the shrubbery. In any considerable quantity it will be injurious to the roots of the trees and shrubs, and in any case worse than the moss, to which we can see no objection. We consider that after the shrubs are well established the soil should not be disturbed. It spoils their effect, and is injurious to the roots.

Moss (*J. K. P.*).—We think No. 1 is one of the Sphagnums, probably S. obtusifolium. You do not say in what sense you wish us to pronounce on the qualities of the two specimens. For Orchids No. 1 alone is suitable, and would require to be obtained from damper ground, where it would grow considerably thicker, and be of finer quality. No. 2 is not a Moss, but a Lichen, and we think it is Cenomyce racemosa, a very pretty kind, superior in point of beauty to No. 1, though both are very pretty. We should be obliged if any of our experienced Orchid-growers would give a list of those Orchids most desirable for their fragrant flowers.

Growing Asters for Exhibition (*Subscriber E. H.*).—You do not say whether they are for exhibiting as cut blooms or plants in pots. Sow the seed in April or May on a spent hotbed, or in a cold frame, putting in about 9 inches of horse droppings or short stable litter, making firm, and covering with 4 inches of good, rich, light soil. Sow the seed in drills about 2 inches apart, and thinly cover with fine soil. Put on the lights and keep them close until the seedlings appear, then give abundance of air, so as to have them strong and stiff. Keep the soil moist, and when they show the second leaf, or are about an inch high, prick them off in a bed prepared as for sowing the seeds, placing them about 2 inches apart, and put on the lights. Keep the plants rather close and shaded for a few days, and then admit air freely, planting out when they are 3 inches high. The ground in which they are to be planted should be deeply dug, well manured, and frequently turned over so as to have it in a thoroughly pulverised state. The situation should be open, but sheltered from wind. For planting out, choose showery weather, and water until the plants are established, continuing to do so in dry weather once or twice a-week, and give manure water at every alternate watering until the flowers expand. Plant 18 inches apart in rows 2 feet from each other. Mulch between the rows with spent stable dung about an inch thick. When the flowers show colour shade with tiffany, or put over them a tiffany awning, which may remain day and night, only it ought to be at some distance from the plants. Look carefully for green aphis, and whenever any is seen syringe or sprinkle with tobacco water, using 2 ozs. of tobacco to a gallon of water, taking care to sprinkle the centre of the plants. If you grow the plants in pots place one plant in a 9-inch pot, watering with liquid manure when the roots reach the sides of the pot, and sprinkling with water overhead daily. It is best to plant in a 6-inch pot in the first instance, and then to transfer the plants to 9-inch pots when the roots reach the sides. The main point is to keep the plants strong and stiff, growing them without check. They should be transplanted with balls. A compost of loam from rotted turves a year old chopped up rather small, one part leaf soil, and half a part of well-rotted manure, with a free admixture of sand, and good drainage, will grow them perfectly.

Pea Stalks and Leaves Yellow (*J. C.*).—The Pea haulm you have sent is variegated with yellow, owing, we think, to the cold of the present spring. The excrescences on the roots are peculiar to the Pea, but they are unusually large, and are, no doubt, the feeding ground of the maggots which you saw when you pulled up the Pea haulm. We do not know that anything would do good, except, perhaps, a dressing of quicklime. We fear they will do little good, though warmer weather would be of great service to them. The ground, we should say, is very full of vegetable matter—leaf soil or decaying manure. Give a good dressing of lime when the ground is vacant. We hear from all quarters a bad account of the Apple crop.

Clearing Water in Pond (*Goddess*).—The water will clear unless it be agitated, but we would cover the bottom with gravel, and plant a few aquatic plants—Nymphæa alba if you have 2 feet of water. Gold and silver fish would thrive in it in summer, but we fear they would not survive a severe winter like the past. You could, however, thatch a portion of the pond on the approach of winter, and that would probably save them. Charcoal we do not consider necessary.

Clearing Lawn of Weeds (*E. D. M.*).—We do not know of any better way of freeing a lawn of Dandelions and other weeds than grubbing them up with a grubber, and dropping in each hole a pinch of salt. This will destroy Docks, Dandelions, Plantain, and all tap-rooted weeds. No book gives the names of varieties of plants, and specially of such things as Coleus. All plants worth growing are to be found in the "Cottage Gardeners' Dictionary," but the varieties, which are ever changing or giving place to newer and improved kinds, are only to be found in catalogues, the "Gardeners' Year Book," and works devoted to particular branches of floriculture. Under the Chestnut trees no flowering plants would grow, but the different kinds of Periwinkle would give a neat green covering to the surface, and so would Ivies.

Dianthus Heddewigi Seedlings (*Somerset*).—Seedlings of the size you enclosed to us will, no doubt, flower well this autumn, but we would now harden them well off, and plant out early in June. Light rich soil is most suitable.

Cobæa scandens variegata Seedlings Going off (*J. F.*).—The cause is probably due to raising from seeds of variegated plants, which usually do not pass beyond the second pair of leaves. Try again, sowing in light soil, and placing in a hotbed, continuing in heat until they are well established in small pots; then harden off and remove to the greenhouse.

Rootlets from Vine Branches (*J. Norman*).—It is as usual for the Vine to throw out such sprout rootlets in a moist atmosphere as it is for the Ivy to send its roots into brickwork. You have not syringed, but there has been plenty of evaporation of moisture. As the Vines are so strong and healthy you may be satisfied, but we would lessen the evaporation by degrees; and not to give any check to the Vines we would remove all these sprout-like roots by degrees, not at once, as the more these are encouraged in the atmosphere of the house the greater is the disinclination to free rooting in the earth. We have tried many experiments with air roots, but we have always found that when much encouraged the roots in the soil seemed to be discouraged. We think you are all right as to cropping, but at the age of the Vines err on the safe side, and do not take too many bunches. We fear, however, that we are rather bad advisers, we always take too many.

Constructing a Pit (*D. M.*).—We think the proposed pit will answer very well for the purpose aimed at, only more light would be an advantage, there being only a short span-roof over side walls about 6 feet in height. We presume these walls are built of brick-on-bed, say 4½ inches. We would prefer them to be 9 inches, either solid or hollow, and then by outjutting bricks at regular levels you could place platforms across. With the heat below, the plunging medium is unimportant. To retain a little heat nothing is better than tan. For mere retaining heat given, cocoa-nut fibre is excellent, and so are rough ashes, &c.

Riddell's Hot-water Apparatus (*Amateur, Cirencester*).—The best way to use such a hot-water stove would be to have the stove or boiler inside the house, and feed it from the outside. You thus get rid of all dust, &c. Such a stove would require but a small smoke-shaft, say 6 inches wide and 6 feet long, with a damper. You might have the boiler

inside, and just shut it off in a simple way to prevent dust getting into the house, or damp the ashes before moving them. We approve of attaching water-pipes to such a stove boiler; but for a small house, if we studied first cost, we would have the boiler alone, or even a good iron or brick stove. We have an old stove in use, with a 3-inch 9-feet iron pipe from it as a chimney, that does wonders, but we run a pole through the pipe often. By placing your stove inside you will save much fuel.

Orange and Lemon Trees Infested with Mealy Bug (*R. J. S. H.*)—Wash them with a solution of 3 ozs. of soft soap to a gallon of water, and to every gallon add twenty drops of spirits of turpentine. You may syringe them with this at a temperature of 140°, and wash afterwards with a sponge and the same solution. This pest requires the greatest patience and perseverance to get rid of it.

Names of Plants (*Rab, the Greenhorn*).—Saxifraga sarmentosa. (*A Constant Reader*).—1, Saxifraga Geum; 2, Ribes speciosum; 3, Allium ursinum. (*Mary*).—Statice sinuata. (*F. M.*).—Myosotis palustris. Give your plants as good treatment as you can, and if any show superior excellence select them to propagate from. We see no other answer to your question. (*D. W. B.*).—Berberis Darwinii (*A Subscriber*).—Erythrina Humei. Possibly from Palermo, where it no doubt is cultivated, but native of the Cape Colony. (*R. I. S.*).—Rhododendron Dalhousiæ. (*F. H. Y.*).—1, Erica Bauerea; 3, E. jasminiflora; 4, E. aristata; 5, Hibiscus Cooperi. (*H. B.*).—Clematis montana. (*Omega*) —1, Cochlearia officinalis; 2, Cardamine hirsuta; 3, Alchemilla arvensis. (*J. L., Surbiton*).—We cannot name either florists' varieties or plants from leaves only; your enclosure is of both.

POULTRY, BEE, AND PIGEON CHRONICLE.

REARING CHICKENS.

In reply to the letter of "O. P. Q.," respecting his chicken losses, I am not quite sure that I should join with Mr. Kell in calling them "prodigious." If I understand him, he expects to rear about 70 per cent. of those actually hatched; and as his complaint is under date of May 4th, a large proportion of these must have been hatched rather early. Now I certainly do not consider Dorkings so easy to rear as other breeds, and while 30 per cent. mortality is by no means satisfactory, for March and April Dorking chickens, especially in such a biting spring as we have had this year, I would not call it so very bad.

I think it is doubtful if breeding-in be the cause, for Dorkings being bred more for size than colour, this one breed is, perhaps, more free from that particular evil than any other. What the cause may actually be it is very difficult to say, unless "O. P. Q." describe the size and nature of his nursery accommodation, whether grass or dry ground for instance, kind of shelter or shedding, &c., and especially the symptoms which have chiefly marked the losses. In the absence of these or any other particulars, the only thing that strikes me in his general treatment is that nearly all the food, highly nutritious as it is, appears to be of a costive tendency. The egg, the rice, the potatoes—all tend that way, but chiefly the egg, which I am certain, from experience, is, as a continuous food, very injurious. I should give the meat every day, and the chopped egg only now and then to correct any symptoms of looseness. Of the value of bone dust in rearing chickens I have repeatedly spoken, and chickens regularly fed with it scarcely ever suffer from diarrhœa. But, on the whole, I am inclined to think that the most important point in the feeding of young chicks is to mix with the oatmeal a little bread and plenty of grass, cut into green chaff an eighth of an inch long, which is easily done by taking a quantity in the hand and cutting it off with a large pair of scissors. Chickens thus fed will eat with real appetite nearly half as much again, and the food mixed with milk will keep nearly double the time before getting sour. The green chaff may also be thrown down alone at intervals. It is literally impossible for chicks to have too much grass, and when thus fed their bowels, at least, scarcely ever go wrong, for while an occasional surfeit of green food will cause dangerous looseness, a constant supply has with nearly all poultry an exactly contrary effect. By thus mixing green chaff in the food Dorkings may be reared with great success, even without a grass run, so far as size and health go, though nothing but grass will give that beautiful bloom which is so requisite in a country-bred fowl. Many of Mr. Douglas's best birds were reared in such gravelled yards; and though it is not fair to compare Brahmas with such a breed as Dorkings, I may perhaps mention, as a proof of what may be done with care in a limited space, that my chicken run consists only of a piece of bare earth 22 by 25 feet, with a shed 6 feet wide up one side, and that not one of the forty-six chickens I have hatched this year has yet left it, notwithstanding which I have only lost three—two by accident, and the third a weakly one, which only lived till three days old.

But after general diet and treatment are determined upon, I believe very much of good or ill success in rearing depends on adapting them to the varying circumstances of weather day by day. The direction of a keen wind, for instance, should always be noted, and the coop carefully placed, so that the chicks may be sheltered. After several days' trying weather there may be a tendency to looseness, and in such a case some rice or chopped egg will be of great service. If the broods seem suffering I always give some spice or condiment in severe days. When the sun is hot, on the contrary, shade must be carefully provided, for heat is nearly as bad as cold; and in very dry seasons copious watering of the ground occasionally will make a great difference to the broods. I need not carry this further, as everyone's common sense will teach what is proper to be done under not only these but other special circumstances of the hour. I may, however, add, that on two occasions, when the fate of a brood was evidently doubtful after many days of the miserable weather we had in April, I saved them by putting them for about two days in an attic on a wood floor well sanded. For permanent lodging I believe wood the very worst floor that can be; but for a few days in such an emergency I never knew harm come of such a change, and the effect of the perfect dryness and shelter on chicks a week old, when nipped by several days' wet or biting winds, is really marvellous; mine came out into the air again totally different creatures.

Like Mr. Kell, I rarely use sulphate of iron when all is well, but invariably add it to the water on a day either wet or much colder than usual. I think he forgets that in a state of nature the hen rarely hatches earlier than May when all is bright and warm; and if we procure chickens in unnaturally cold weather, "natural" feeding may, perhaps, be scarcely sufficient to bear the trial. I do, however, believe that any unnatural stimulus, whether it be iron, spice, ale, or anything else, must, if continued, be injurious. Special treatment should always be reserved for special needs.

In such seasons as the present many hens do not brood the chickens enough for warmth, and I have myself, in fact, been driven to making artificial mothers. They are very simple, consisting only of a sheepskin mat, 18 inches square, tacked round the edges to the inside of the top of a shallow box, with no bottom nor front. It is amusing to see how the chicks will creep in for "a warm," even while with the hen; and when used to it they may be taken away from her almost at any time, which is often a convenience. The box should be about 7 inches deep, and can be bedded into the loose dry earth of a shed deeply enough to take the smallest chicks when needful. By throwing food under it they readily learn to go in. I ought in fairness to say that for this useful idea I was indebted to the intelligent poultry manager of Mr. E. Jones.

Custard is, I think, best made by beating up egg and milk, cold, in equal parts, and then putting it in a saucer on the top of a stove to set. Chickens are very fond of it, and it is undoubtedly good food, but is very expensive, and I am very doubtful if they get on any better with it than on plainer diet. I never met anyone who could say there was any marked difference. The easiest and best change, when chickens become tired of oatmeal slaked with milk, is to give them porridge. They may have new milk to drink to any extent, so that it shall never be allowed to stay till sour; and I believe this to be equal, if not superior, to custard in its effect on the birds.—L. Wright.

GREAT HARWOOD SHOW.

The paragraph in the Journal of the 4th inst. bearing my signature was, as Mr. Ashworth has been already informed by letter, part of a reply, quite too lengthy for publication, in answer to the Editors' private inquiry of me, "Who is this Mr. Ashworth?" It was written as a private reply to a private letter, for, I continued, I did not myself know Mr. Ashworth if I met him, for he was an entire stranger, as I knew nothing myself of his individuality. Even the portion of the letter as now printed states it was by me written "for your (the Editors') information." I have received so many anonymous, and also other letters, bearing (now proved) fictitious signatures, from the neighbourhood of the show since this affair, that I cannot but regard many of them as purposely forwarded by the writers to provoke further quarrels and misunderstandings. So much for wilful intention on my part to criminate anyone unjustly.

As to the suggestion of Mr. Ashworth, that "the wisest and cleverest of men are liable to make mistakes," it is simply trying to beg the question, as in the case of the prize Dragoons at Harwood a mistake in colour was an impossibility. In

judging where different breeds compete in the same class, I have always as a first step, before making the awards, noted down the respective breeds opposite the numbers in my judging book; and in case of various colours of the same variety competing, colour has been as invariably prefixed. At Harwood Show I find both the winning pens of Yellow Dragoons were afterwards each checked off five separate times during the judging, which, if a mistake, would necessitate in all twelve consecutive mistakes on these two pens alone, which even any one check would at first sight have corrected. Both pens were Yellows without any mistake; my award-book is unmistakeable evidence, and I am prepared to ratify this fact by the most solemn deposition.

As one proof of the unmerited annoyances to which I have been subjected for simply and fearlessly doing my duty, I have forwarded for your perusal the whole correspondence between Mr. Ashworth and myself, with other official vouchers, totally confuting his uncalled-for insinuations. On return they will be open for inspection, and will give conclusive proof that I am far more sinned against than sinning.—Edward Hewitt.

[This letter must close the subject in our columns. We have read the letters that have been received, and copies of those written by Mr. Hewitt, and our thorough conviction is there was foul play. Who was the delinquent we do not attempt to say, though if it could be proved to us we would hold him up to the scorn he deserves. Every lover of honesty must regret that Mr. Hewitt has been subjected to so much annoyance, but we are sure that it will not deter him from his well-known honourable course.—Eds.]

THE VARIETY OF PIGEONS YOU SHOULD KEEP.

Once at a poultry show, I noticed that an elegant-looking young lady was much attracted by the Pigeons. She stood before this pen and that pen, now her head on one side, then on the other, scrutinising and admiring; she drew the attention of her mother to this variety and that variety. That mother, a dear, pretty old lady, gentleness and goodness itself, more than once kindly said, "Whichever you like, dear." How many nice old ladies there are in the world, kind and unselfish, and therefore loved, and therefore very happy! I said this was a very pretty old lady; hush! impertinent youths of both sexes, and especially of the *softer*, whichever that may be, there is such a thing as a pretty old lady. Ah! prettier than many of you young ones, and a great deal prettier, too, and this *was* a very pretty old lady. She had abundance of snow-white hair, a smooth wrinkleless forehead, bright but at the same time gentle-looking black eyes, and a neat, oblong, finely-chiselled face. She looked, too, so calm, and quiet, and good, and she was ready, I am sure she was, "to go up higher." The daughter was pleasing, too, tall and graceful, and her lip playfully pouting now and then. "Like her father," I said to myself, for the mother was a widow, and in the lavender stage of her weeds. The daughter drew, almost dragged, her mother to notice the Pigeons, and kept saying, "I should like to keep Pigeons so much, but I do not know which sort to keep," emphasising these words with a sharp tap of her parasol on the pens, and the old lady always said in reply, "Whichever you like, dear." But this, though most amiable on her part, did not help the young lady to a solution of her difficulty; nor, I believe, was that young lady alone in her difficulty. I have had the question put to me by word and by letter more than once, so I can well imagine a great number of persons who, having had their attention attracted (and what more attractive?) by the beautiful specimens of all the varieties of fancy Pigeons exhibited at a good show, have had this question on their lips, "What variety of Pigeons shall I keep?" This question I shall now endeavour to answer for the benefit of inquirers of all sorts and sizes, of all ages and both sexes, of all ranks and all capacities of purse.

Fancy Pigeons are very numerous as well as very beautiful, and there are almost infinite varieties of form, as well as blending of feather. Where will you find such varied beauty? Nowhere, I think, in one class of bird. Hence tastes the very opposite may be gratified. Does the eye delight in colour?—that can be gratified; witness especially some of the German Toys, especially the Suabians. Does another delight in gracefulness of form?—that can also be gratified, witness the slender Dragoon, and stronger Carrier; or another delight in size?—Runts the long, and Pouters the tall, will please; or another delight in smallness and colour?—there is the Almond Tumbler.

Are you, gentle reader, a man in good easy circumstances, not as Charles Lamb hath it, "a slender annuitant," but with expenditure less than income? or are you a lady having nothing to do but sign your name twice a-year to receive from Messrs. Plutus & Croesus, those heavy sums? Well, if you are either, be thankful that you are so circumstanced in a world where men, aye, and women, too, have to strive and jostle for bread. Oh! be very thankful. Now, supposing also that you delight in a country life, revel in a landscape, delight in a garden and greenhouse, and all country home pleasures, and like to make your beautiful home more beautiful each year. Then if so, you have the greatest source of Pigeon pleasure at your command, for you can keep all the varieties. You can go in for elegance of structure; a breeding-place furthest back, three sides of a square, shut in when needed from all cold, where you can sit in winter among your pets, or stroll round from box to box, cigar alight. This innermost compartment may open into a wired space for flight, that again opening into another, where a fountain may play, a gentle jet only, and a shallow gravel-bottomed space beneath where the birds can wash; and pretty creepers may be outside both wired enclosures. A rockery and a fernery flanking all this would be ornamental, not detrimental in a garden. Within, the Pigeons of all varieties—the tall bulky Pouter beside the tiny dapper Tumbler; the long-beaked beside the short-beaked; the turned-crowned beside the smooth-crowned; the whole-feathered, the pied, the chequered, the magpied, the pure white, the raven black, the mottled, the splashed, the black-headed, the white-headed, the soft-feathered, the hard-feathered. What a lovely assortment of feathered pets you would be able to enjoy, and how much pleasure you would derive from them! If still a busy man at times you would the more enjoy the leisure hour spent with your birds; and if quite a retired man, having sheathed your sword with which you cut your way to success in life, then you would, looking back and talking over your past active career—you would have an agreeable pastime for your well-earned repose. You would be the very man I should, if I dared, envy.

But all are not rich enough to possess all the varieties, therefore the best plan is to adopt one variety at a time, and study its capabilities, and breed it to perfection. Then each variety of man may be suited with some variety of Pigeon. Thus there is in the world a walking class of men; a genus to themselves are these great walkers, they greatly benefit their shoemaker and butcher, while their doctor regards them with great disgust. I know the men at once—thin men, long-legged men, what there is of them all bone and muscle; they have a tanned cheek, and an expression of face

> "Gained by knitting of their brows
> Beneath the glaring sun."

These are the men who might have been colonists, explorers, travellers, and they are the men to keep homing Pigeons. They always want a walk and an object. Let them keep Antwerps. Further and further they may extend their walks, and toss their birds on some lone hill or breezy down, and timing their flight from their hand stride home eager, and hot, and anxious to find how long their birds got there before themselves.

But all men are not great walkers; habit, business, infirmity, or taste, keep some at home. To such their house and garden are all in all. They may suitably keep, if on a hill or in an open spot, high-flying Tumblers, who, like themselves, are—

> "True to the kindred points of heaven and home,"

face upward watching their birds, or tending them, in which there is always a special interest, as Tumblers are the cleverest and tamest of Pigeons. Little, confiding, bold fellows they are, who will feed out of your hand, and finding nothing in it peck sharply at your finger. Then there are the still more home-keeping varieties who rarely fly save from the ground to the top of their house, and, therefore, never stray away and annoy neighbours; at least, neighbours fancy they annoy them. Or, again, are you a little pleasant smiling fat man with a dot for a nose, a double chin, and double the stomach allotted to most men, and with a little weakness for tasty viands? then if so, the full-fleshed Runt must be your love, not the prize birds, which are bad breeders, but the smaller, yet large-bodied and exceedingly appetising in pie or from spit. Then if you reside in close London, or closer manufacturing town, where cats in brigades abound on roof or wall, and make night hideous with

their music all out of time and harsh, and who would pounce on any poor bird if at liberty—still if you hanker after bird pets in the form of fancy Pigeons, that hankering can be gratified by keeping the Londoner's Pigeon, his bird for a century at least, the elegant-shaped and elegant-coloured Almond Tumbler, or his kindred Short-faces. A little room or a tiny greenhouse will do, an invalid may tend them and enjoy them, and as they must not fly they are the birds for the city, or for those persons who are obliged to remain in-doors.

But there are the ladies, I can suit their special tastes, too. The older who remember how neatly the cottage bonnet looked, and neater the face inside, they may have reminders of both in Jacobins, whose modest folding feathers half hide their pretty faces. Or are you a young lady of the present day, with chignon and tiny bonnet pinned to the hair? then the Helmet and the Turbit will do for you. Are you Anglo-Catholic, or you would say Catholic without the Anglo? there are Nuns, Priests, Monks, and Carmelites for you. Or does some enamoured swain declare in your listening ear (foolish fellow!) that you are an angel? you can keep Archangels for company. Or are you matron, and the lord of the house and of your heart has begun to lose his ambrosial locks, and that youngest pet, *his* pet, thinks it fine fun to stand tip-toe behind papa's chair, and "kiss the bald place," and run off with a shriek, hoping to be run after? then like master like Pigeons, for there are Baldpates to match; or has he a hirsute chin? there are Beards. Or are you tender on "a soldier covered with lace," as the nursery rhyme had it? you can have dashing Dragoons, or heavier Horsemen, or puffing Trumpeters. Then ladies always love the pure white Fantail, the ladies' Pigeon. If you do, be sure and have both varieties, the stouter and flatter-tailed Englishman, and the tiny tremulous Scotchman. The latter always remind me of a parochial story. I had long suspected an old woman of frequenting the publichouse; one day I caught her coming out of one, with too ruddy a face and too bright an eye. Next day I brought round the subject when in her cottage. She, woman-like, quickly retaliated and declared she had not been well ever since I saw her, and it was my fault, for it was far too bad of me "to make her go all of a tremble like that." Certainly the Scotch Fantail goes all of a tremble like the old woman. Some ladies, too, seem now-a-days always making point lace, they may keep Lace Pigeons.

But, joking apart, the wonderful variety in the birds will suit almost all, if not all varieties of tastes. There is the odd little Air Tumbler, or rather house Tumbler, which, though it cannot fly up to a bench without tumbling, delights some persons. But there is one class of mind and taste, and a very increasing class apparently, I mean those who enjoy the excitement of keeping birds for showing, and who dream of silver medals and glittering cups, just as others, myself among them, like only to keep the birds for home interest and amusement. Well, the losers of prizes have a better chance now than ever, for a few years since poultry only was exhibited, but now Pigeons are almost always shown with poultry; and was there ever such a Columbarian treat as the thousand Pigeons last winter at the Crystal Palace Show? No doubt the fancy will go on and increase every year, suiting every taste, and persons of each taste may know now what variety to keep.—Wiltshire Rector.

CRITICISM FROM BEYOND THE STYX.

Respected Sirs,—You are not, I believe, spiritualists, and so do not often receive communications from the place whence I date this letter. I write in my character of "a blessed ghost." Coleridge, in his "Ancient Mariner," uses the term, which the *Times* Bee-master applied to me. He, pansciolist as he is, cannot of course be in error. As a prophet he foresees the future, as a scholar (?) he knows the past. Things present, therefore, confined as they are to the infinitessimally small portion of time which separates the past from the future, cannot be unknown to him. Several years ago he announced my decease in these words—"The Rev. Chas. Cotton, whilst he lived, the Prince of Bee-masters," page 91. Much obliged to him for the compliment, though I am sorry to say I cannot return it.

You will be pleased to hear that an eidolon or ghost of the Journal of Horticulture and Cottage Gardener is weekly transmitted to these regions, and a great and anxious crowd there is at the dead letter office when the mail comes in. Last week I noticed there amongst others the Corycian old man who cultivates the Asphodels, over which the mighty Achilles is always stalking, and his own lilies and roses to boot, after a method which he has learned from your pages. Aristæus, the bee-master, was also there. He, too, is one of your readers, and tends the eidola of the bees which he lost in Tempe by disease and starvation, on the system which he has learned from you, and in consequence preserves them from hunger and sickness. In his name, then, in connection with my own, and in the interest of the myriads of bees who are every year cruelly and wastefully doomed to die, I protest against the recommendation of the "brimstone torch" contained in an otherwise useful letter which you have printed in a late number. It is a retrograde step with a vengeance. I should hardly have been more surprised had Earl Russell brought in a bill for rekindling the fires of Smithfield and burning Cardinal Cullen and Archdeacon Manning, tied back to back, at the same stake. I fancy that I have done some little good during my lifetime towards disseminating a knowledge of the better way—better because more profitable, as well as more humane. Bee murder (according to Dr. Cumming's Bee Act) was, I trusted, going out, and so to see it recommended again by a writer in your Journal caused a cold shudder to run through the eidolon of many a bee-master down this way. I beg, therefore, that you will give insertion to this our joint protest, and beg to subscribe myself, as of old, your faithful servant,—Wm. C. Cotton, *Vale of Tempe, Elysian Fields.*

P.S.—If you please I will next week send you some recollections of a better way.

[Pray do, for it will rejoice many others besides ourselves to read the communications from you to the bee world.—Eds.]

CAUSES OF HIVES PERISHING IN WINTER.

In compliance with my request, "A Lanarkshire Bee-keeper" gave a description of the mode in which he ventilates his hives during winter, and I now thank him for doing so.

As a mere theorist I would condemn the practice of entirely shutting up the entrances of hives in time of snow; but seeing it has been found by actual experiment to be attended with good results, I must, in the absence of proof to the contrary, accept the statement as correct. The surmise, however, that the bees, in the case mentioned by me, might have perished by suffocation, and not by improper ventilation, was not supported by the evidence presented; and my present purpose in writing is to attempt to answer the question, How we may know when bees have been suffocated, or have died of cold, or of cold and hunger combined?

Whenever the air in a hive becomes close and confined the bees are thrown into a restless condition, and begin to ventilate. If the entrance is entirely closed general commotion follows, and the whole of the inhabitants may be seen running over the combs and up and down the sides of the hive in search of an outlet. As the movement increases the temperature rises, and when the atmosphere within is no longer capable of supporting life the bees fall down in masses on the floorboard. Few, if any, perish in the cells; they lie in heaps, and present a glistening appearance, owing to the perspiration with which they are covered.

But the aspect of things is very different when bees die of cold, or of cold and hunger combined. The approach of this fatal influence excites no commotion; instead of seeking for an outlet the bees draw closer and closer together, and if the combs on which they cluster are empty every vacant cell is occupied. In this condition they die; only a few fall down and form little pyramids under the interstices of the combs. When a hive which has died in this manner is turned up and examined, the majority of the bees will be found adhering to each other and still suspended between the combs, whilst from every empty cell within the clusters a tail may be seen protruding.

There is not, I imagine, the least difficulty in ascertaining, from the appearances presented, whether a hive has become defunct from suffocation, or from famine and starvation combined. If the bees of a hive die of hunger alone when the temperature is high, there is not the clustering together for warmth which has been described. Before succumbing to this cause alone many of the bees, though only able to crawl, find their way to the outside, and the ground in front is sometimes covered with the helpless and the dead. This occasionally

happens in summer, but never in winter, with the famished, when frost or great cold prevails.

With these views I must demur to the supposition that the straw hive with its entrance so closed as to admit air and to exclude bees, and from which the inch-plug in the crown was withdrawn, died from want of air. There was a free passage for it between the milk-pan and the skep, and through the straw thatching that covered all. The hole left by the plug was not obstructed in the least by wax or any foreign body, nor were the dead bees on the floorboard at all numerous. Most of them occupied empty cells and remained suspended between the combs. De Gelieu says, "I have seen an excellent swarm perish in consequence of a slight bend in the board, which left an interstice on each side through which a cold north wind sifted and froze more than three-fourths of the bees; and no after-care was able to save those that were left." But without any chinks, or any openings left for ventilation, the wind may blow in at the entrance and circulate through the interior of the best-protected hives in such a way as to paralyse the bees and occasion death. An instance of this kind came under my observation last winter. In a box made of the best material, and with its entrance kept carefully free of dead bees, the inhabitants all perished through the influence of cold.—R. S.

OUR LETTER BOX.

Woodbridge Poultry Show.—"We have written to the Secretary for prizes awarded, but have received no answer, although it is now ten weeks since the Show, and the rules say that if prize money be not received in fourteen days exhibitors will please apply for it.—S. & R. Ashton."

Guinea Fowls Laying (*Lincolnshire Vicar*).—No fowls lay every day without stopping. Guinea fowls, in common with others, lay twice in the year and a great many eggs, without wanting to sit. They always steal their nests if they can. The best authorities, and we hold with them, are of opinion that Guinea fowls are strictly monogamous.

Chicken Voracious and Giddy (*E. Woollen*).—Your chicken is suffering from vertigo, or from injury to the head. We advise you to treat it with camphor, giving at intervals of eight hours a pill the size of a very small garden pea; continue this till the disease disappears.

Pullet Found Dead (*W. Carr*).—Considerable decomposition had set in before we received your bird. We should be sorry to give you a false report, and, therefore, speak most cautiously. There was no disease about her, nor anything to cause death, unless it were poison. You will do well to recollect that a poisonous substance may be accidentally found and eaten. We do not think spices good or proper food for fowls.

White Face of Spanish Cock (*Subscriber*).—If sticking plaister fails to hold up the overhanging parts, you have no remedy that is admissible.

Rattling in Fowl's Throat (*C. B.*).—The departure of the east wind will do much for your fowls. Wash out all their nostrils. Give them some bread soaked in strong beer. Let them have camphor in all their water, and give them camphor or Baily's pills. It is not roup, as the breed is not subject to it. It is cold, and it is an indication or a result of improper or insufficient feeding. Confine yourself to ground oats or barleymeal twice every day. Feed at midday with Indian corn, or table and kitchen scraps.

Hatching a Cracked Egg (*W. L.*).—We have known a chicken produced from a cracked egg, but a piece of stout paper was securely fastened over the crack at the time it was made. We can give no information about incubators.

Separating a Brahma Hen from Her Chickens (*R. W.*).—Our difficulty is to keep our hens with the chickens, not to induce them to leave them. We suppose you, in common with most poultry breeders, keep the chickens away from the adults. As soon as a hen under a rip lays an egg, we know from that day she is only a step-mother, and we remove her to the society of those of her own age. The rip she vacates is left open, and the motherless brood roost in it. They are nearly adults before they care to perch. In hot weather you may move them without risk when they are seven or eight weeks old.

Best Hatching Time (*E. H. R.*) —It is a common saying that chickens hatched in June never do well. It has passed into a proverb—

"Chicks that are hatched in time of hay
Will never grow up, but pine away."

We believe it so little that we have "garnered up our hearts" on the produce of fifteen or sixteen steady sitters. At the same time we are not disposed to undervalue the old tradition. There can be no doubt that if we are to choose our own time, we should prefer May to June, because in the first month the nights are getting shorter, in the second they are getting longer.

Skimmed Milk for Chickens (*Oxoniensis*).—It would be as good as the unskimmed for wetting the meal.

Ducks' Eggs not Hatching (*R. P., Ipswich*).—It was only a fortnight ago that we answered a similar question. As the eggs have been put under hens, the cause of the failure is evident—namely, that the eggs have been kept too dry. The eggs should be wetted every day, when the hen is off the nest. Let the water be just warm enough to communicate warmth through the shells.

Wet Spots on Eggs (*N., Lancashire*).—Leave the eggs alone, except to sprinkle them with water when the hen is off.

Propagation of Liquorians (*G. B. C.*).—A long answer to your inquiries is unavoidably postponed till next week.

Liquefying Candied Honey (*C. A. J.*).—We do not know of any process by which you can liquefy your honey candied in the comb sufficiently to enable you to extract it by the centrifugal machine. To clarify the honey, place the combs in a large stone jar without any water, which must be stood in an iron saucepan or boiler, with water nearly up to the top; simmer gently until the comb is quite melted. Take out the jar and let it stay until cold, when the wax, which will have formed into a solid cake on the top, can be easily removed. The honey will remain clear and fit for use for a considerable time. Your honey congealed chiefly from having been kept in too cold a place.

Hive without Queen (*H. J.*).—If the brood comb you inserted in the hive contained brood in all stages, or eggs, you have done all that at necessary so far. If you can inspect the comb in a week or so from this time you will be able to ascertain if royal cells have been raised. You will, moreover, probably be able to judge whether your experiment has been successful, by observing whether the bees manifest greater activity in working and in carrying in pollen.

METEOROLOGICAL OBSERVATIONS,

Camden Square, London.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude 111 feet.

Date. 1871. May.	9 A.M.					In the Day.				Rain.
	Barometer at 32° and Sea Level.	Hygrometer.		Direction of Wind.	Temp. of Soil at 1 ft.	Shade Temperature.		Radiation Temperature.		
		Dry.	Wet.			Max.	Min.	In sun.	On grass	
	Inches	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
We. 17	30.027	46.4	41.7	N.E.	51.5	57.6	40 3	105.5	43.2	—
Th. 18	29.849	52.5	48.7	N.	51.5	62 2	41.0	111 8	39.5	0.160
Fri. 19	30.172	55.0	52.6	S.W.	51.6	70.5	43 5	118.5	40.9	—
Sat. 20	30.278	59.2	53 2	N.W.	52.6	69.8	45.4	115.1	44.4	—
Sun.21	30.337	52.7	51.0	N.E.	53.8	65.8	48.0	85.2	45.0	—
Mo. 22	30.261	57.7	52.0	S.E.	52.9	66.2	39.6	111.5	38.8	—
Tu. 23	30.048	62.9	56.0	S.E.	53.9	70.1	46.1	116.0	43.8	—
Means	30.139	55.2	50.7		52.5	66.0	43.4	109.1	42.2	0.160

REMARKS.

17th.—Warm sunny day with cold wind, cold night.
18th.—Dull, overcast morning. Rain began at 1.3 P.M., showers at intervals afterwards, wet night.
19th.—Warm and fine.
20th.—Dry fine morning, and, though occasionally overcast, generally fine
21st.—Dark cloudy morning, fine afternoon and evening.
22nd.—Fine throughout.
23rd.—A fine warm day, sun getting very powerful.
A fine sunny week, no rain except on 18th, and frequent drying winds —G. J. Symons.

COVENT GARDEN MARKET.—May 24.

Supply and demand about balanced. Out-door produce for the most part is coming-in in good condition, improving under the influence of the present genial weather. The foreign trade has again been very active during the week; in addition to the articles mentioned in our last notice, there are Cherries, Apricots, and Globe Artichokes. The Potato trade have large stocks of old Potatoes still on hand.

FRUIT.

	s.	d.		s.	d.		s.	d.		s.	d.
Apples	½ sieve	1	6 to	3	0	Mulberries	lb.	0	0 to	0	0
Apricots	doz.	2	0	3	0	Nectarines	doz.	12	0	24	0
Cherries	lb.	2	0	5	0	Oranges	℔ 100	6	0	10	0
Chestnuts	bushel	0	0	0	6	Peaches	doz.	12	0	24	0
Currants	½ sieve	0	0	0	0	Pears, kitchen	doz.	0	0	0	0
Black	do.	0	0	0	0	dessert	doz.	0	0	0	0
Figs	doz.	8	0	15	0	Pine Apples	lb.	6	0	10	0
Filberts	lb.	0	0	2	0	Plums	½ sieve	0	0	0	0
Cobs	lb.	2	0	2	6	Quinces	doz.	0	0	0	0
Gooseberries	quart	0	8	1	0	Raspberries	lb.	0	0	0	0
Grapes, Hothouse	lb.	6	0	12	0	Strawberries	oz.	0	6	1	0
Lemons	℔ 100	6	0	10	0	Walnuts	bushel	10	0	16	0
Melons	each	6	0	12	0	ditto	℔ 100	1	0	2	0

VEGETABLES.

	s.	d.		s.	d.		s.	d.		s.	d.
Artichokes	doz.	4	0 to	6	0	Leeks	bunch	0	4 to	0	6
Asparagus	℔ 100	4	0	8	0	Lettuce	doz.	1	0	2	0
Beans, Kidney	℔ 100	2	0	3	0	Mushrooms	pottle	1	0	2	6
Broad	bushel	0	0	0	0	Mustard & Cress	punnet	0	2	0	0
Beet, Red	doz.	2	0	3	0	Onions	bushel	7	0	10	0
Broccoli	bundle	0	3	1	6	pickling	quart	0	0	0	0
Brussels Sprouts	½ sieve	0	0	0	0	Parsley	sieve	3	0	6	0
Cabbage	doz.	1	0	2	0	Parsnips	doz.	0	3	1	0
Capsicums	℔ 100	0	0	0	0	Peas	quart	2	0	4	0
Carrots	bunch	0	3	1	0	Potatoes	bushel	2	0	4	0
Cauliflower	doz.	6	0	10	0	Kidney	do.	3	0	4	0
Celery	bundle	1	6	2	0	Radishes	doz. bunches	0	6	1	0
Coleworts	doz. bunches	3	0	6	0	Rhubarb	bundle	0	4	0	6
Cucumbers	each	0	6	1	6	Savoys	doz.	0	0	0	0
pickling	doz.	0	0	0	0	Sea-kale	basket	0	0	0	0
Endive	doz.	2	0	0	0	Shallots	lb.	0	6	0	9
Fennel	bunch	0	3	0	0	Spinach	bushel	2	6	4	0
Garlic	lb.	0	8	0	0	Tomatoes	doz.	0	0	0	0
Herbs	bunch	0	3	0	0	Turnips	bunch	0	9	1	6
Horseradish	bundle	3	0	5	0	Vegetable Marrows	doz.	0	0	0	0

POULTRY MARKET.—May 24.

We have indications of a rather better supply. We need it; the extravagant prices made by a few good young things lately, are beneficial to no one.

	s.	d.		s.	d.		s.	d.		s.	d.
Large Fowls	6	0 to	6	6		Pigeons	0	9 to	0	10	
Smaller ditto	5	6	6	0		Rabbits	1	5	1	6	
Chickens	3	0	3	6		Wild ditto	0	9	0	10	
Ducklings	3	0	3	6		Hares	0	0	0	0	
Goslings	6	0	6	6		Guinea Fowl	3	6	4	0	
Pheasants	0	0	0	0		Grouse	0	0	0	0	

WEEKLY CALENDAR.

Day of Month	Day of Week.	JUNE 1—7, 1871.	Average Temperature near London.			Rain in 43 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.	Days.	m. s.	
1	Th	Meeting of Linnean Society, 8 P.M.	68.4	45.9	57.2	15	51 af 3	4 af 8	47 af 5	1 af 3	13	2 32	152
2	F		68.9	45.1	57.0	19	51 3	5 8	16 7	26 3	14	2 23	153
3	S		69.4	44.2	56.8	21	50 3	6 8	42 8	59 3	○	2 14	154
4	Sun	Trinity Sunday.	69.3	44.4	56.9	15	59 3	7 8	59 9	43 4	16	2 4	155
5	M	Meeting of Entomological Society, 7 P.M.	70.5	47.3	58.9	24	49 3	8 8	0 11	41 5	17	1 54	156
6	Tu	Meeting of Zoological Society, 9 P.M.	69.9	47.6	58.8	22	48 3	9 8	46 11	50 6	18	1 43	157
7	W	Royal Horticultural Society, Fruit, Floral, and General Meeting.	69.3	46.5	57.9	26	47 3	10 8	morn.	8 8	19	1 33	158

From observations taken near London during forty-three years, the average day temperature of the week is 69.4°, and its night temperature 45.9°. The greatest heat was 90°, on the 5th, 1846; and the lowest cold 33°, on the 5th, 1856. Tho greatest fall of rain was 1.02 inch.

ORCHARD-HOUSE PROSPECTS.

IF these we may now speak confidently, and the number of orchard houses renders the subject interesting.

The splendid sunshine of last summer, succeeding a year of enforced rest, has made this season one of promise. Out of doors, however, our Peach trees present a comparatively miserable appearance, owing to the prevalence of curled or blistered leaves where no protection was employed. In the houses I have now most of Mr. Rivers's new Peaches in good numbers, and variously placed and trained. They all look very well indeed. The whole crop is enormous, and had to be thinned several times over. The leaves are very healthy, and there is but little aphis.

My neighbours complain that they wear out their potted trees in half a dozen seasons, but here are some which, after ten years' steady bearing in pots, have now been five years planted in the borders, and are as fine as ever. The secret is that they are never cropped so heavily as my neighbours' trees are. Two thousand five hundred fine fruits are quite enough for a house 80 feet by 15, and two thousand would have been much better. Of these, one thousand eight hundred were sold in Covent Garden. Still, it must be allowed that it is most profitable in many cases to crop rather heavily year after year, and then to renew the trees. Could we have houses to rest them every third or fourth year, and stimulate them during production, this would even be advisable where large demands were made on the gardener. But this rule is inapplicable to border trees, and these have their peculiar merits, not the least of which, as we all know, is being less dependent on capricious watering. This continuous sunshine renders abundant water imperative while the foliage is developing and the fruit swelling.

My old diagonal cordons continue in good health, with the exception of one of them, which commenced exuding gum from about a foot above the collar at no perceptible wound. Many remedies were tried: the exudation broke out a little higher each time, and at last one large spur and the shoots on it died off. A succession of tight bandages with tar between them arrested the flow, and the upward sap has evidently avoided this portion, but there is a general slight chlorotic character visible in the leaves, and next season will be a test for the veteran, now sixteen years old. I mention this, chiefly because M. Dubreuil considers that the life of the Peach (I presume on the Plum stock) is ' valueless after twenty years." Such might be the case with trees under glass, but when the amount of crops gathered, the locality, training, and sort were all considered, would this rule apply to all Peach trees on the wall also? At any rate, this would tend to prove that it is safer to have cordons which can be easily replaced, especially when new varieties are so continually appearing.

The more we see of orchard-house work the more we must admire its advantages. Looking over a friend's house, which I designed for him two seasons ago, I found there a first-rate crop of the best sorts growing in what was formerly a mere back yard, close to the road, and rather enclosed by a north wall. We had to place the orchard house over a Vine border, and immediately in front of the vinery of course. This was done by making the orchard house with a short hip of a suitable height, having all the trees, except those in corners, in pots, and arranging so that the gutters of the vinery could flood the Vine border at pleasure. This watering, however, was found not so necessary after all, and the Grapes have never been so fine before. Thus there is at present in a former back yard, in a narrow space between an old vinery and a north wall, a capital house full of the newest sorts of Peaches and Nectarines, producing for the owner, an invalid, a succession of the best fruits in the world, refreshing and digestible. With the Grapes, and the Pears and Plums on the walls, this small garden, with its croquet lawn, and flowers in cases and conservatories, leaves only Apples and vegetables to be sought for in the markets.

Such are the advantages of glass, and not the least of them is its application to growing choice Peaches and Nectarines, instead of on open walls. The generality of suburban gardens are like the one in question, and would be best laid out in some such way.—T. C. Bréhaut. *Richmond House, Guernsey.*

THE ORCHARD HOUSE AND ITS COMMUNISTS.

The late Bishop of Chichester, on the occasion of a dinner given to the Agricultural Society at Oxford, at which he (being then Vice-Chancellor) presided, in proposing the toast of the evening, "Success to Agriculture," said he supposed the members of the Society, on visiting so learned a University, would expect from him as its representative a speech in Latin; but that as it was possible that some of them might have forgotten what they had learned at school, he should append to the Latin quotation he was about to offer a literal translation. Cicero, he said, declared, "*Nihil est melius agriculturâ.*" Responsive to the general look calling for an explanation he construed it, "Nothing is better than agriculture," which sentiment elicited loud cries of "hear, hear!" from all parts of the room. On silence being restored he proceeded, "*nihil honestius,*" "nothing is more *honourable,*" which, I need hardly say, was uproariously applauded; and some one delightedly exclaimed, What *will* he say next? Why, "*nihil uberius,*" to be sure, he replied, which means, "nothing is more *profitable.*" Loud cries of Bravo! followed this announcement, a jingling of glasses, varied by a growl from one bucolic gentleman that if Mr. What-d'ye-call-him had foreseen the price at which corn was then being sold he never would have committed himself to such an unfounded statement.

Now, sir, had Cicero lived in our days he would have vastly delighted in orchard-house culture, and, next to agriculture, would have justly designated it as good, honourable, and profitable. Yes, profitable, for if the produce of a well-managed orchard house were to be turned into hard

cash, the receipts, after deducting incidental expenses, would exceed the interest of many investments which are considered lucrative. I grant there are drawbacks; for instance, we have this season had to contend with weather which, owing to the coldness of the nights, has been upon the whole unfavourable for setting; but now that we can count the fruit likely to stand we may congratulate ourselves upon our prospects of a profitable yield, as compared with the forlorn hopes of those who this year have to look for a crop upon unprotected walls.

I still continue to be satisfied with my orchard house, though I must confess that this year I have had a hard entomological battle to fight; for first, the excessively hot weather during the early part of the spring brought the red spider out of his winter hiding place, and gave him a fair field for commencing his depredations at a time when, for fear of damaging the blossom, the syringe was scarcely available. I found even my Apricot trees infested with red spider, which I notice, inasmuch as Mr. Rivers in his valuable treatise hints that Apricot trees enjoy an immunity from the attacks of the pests of the orchard house. I found the only plan was to go over each leaf that bore marks of the destroyer, and rub the under surface with my finger. The subsequent cold weather seemed to induce honeydew, followed by myriads of aphides, and these (like the Paris insurgents) being hard to get rid of, I had to treat to a thrice-repeated dose of fumigation. Poor Paris, while abandoned to those *Red* spiders in human form, the Communists, might be not unfitly compared to an orchard house in the possession of the insect varmint I have exterminated, and it really seems now to be undergoing the same remedy of fumigation, involved as it is "in fire and vapour of smoke." But there is this striking difference: The mischief wrought in Europe's fairest city is irreparable; whereas if in our glass houses a tree or two should be destroyed by blight or mildew, your advertising sheets inform us of plenty of complaisant gardeners who, at a trifling cost, will be happy to repair all our damages.

My trees, which are in perfect health, have a fair but not an abundant crop this year. I am still constantly thinning out, as I much prefer a comparatively few but fine fruit to bushels which not only fail to come to perfection, but also exhaust the vital energies of the tree. I have this year grown a few of the best Roses in pots in my orchard house, and the ladies are quite delighted at having in the drawing-room such early specimens of this queen of flowers. My Vines beneath the rafters look most luxuriant, only I wish that they did not cause quite so thick a shade. As I look up I am reminded of what Cicero said of the Vine (Vitis)—"*Quam serpentem, multipliei lapsu et erratico, ferro amputans, coercet ars agricolarum, ne silvescat sarmentis*," "And this (*i.e.*, the Vine), as it creeps along in a winding and erratic course, the husbandman's art by pruning restrains, lest it should run to wood." The above passage was once rendered by a Cambridge undergraduate, who, I fear, had omitted to prepare for lecture, in the following highly ingenious manner—*Quam serpentem*, which serpent, *multipliei lapsu et erratico*, slipping along in many a maze, *ars agricolarum*, the art of husbandmen, *amputans ferro*, chopping in two with his spade, *coercet*, prevents, *ne silvescat sarmentis*, its too many wrigglings. This is a fact.—A Constant Reader.

GREENHOUSE PLANTS.—No. 4.

Passiflora cærulea racemosa.—Growth rather slender but very free, and the plant does well in a greenhouse, which is more than can be said of the majority of the Passifloras enumerated in catalogues as suitable for the temperature of such a structure. The flowers are reddish purple, produced in great profusion in May, June, and throughout the summer, followed by an egg-like fruit, pale yellow when ripe, and of the size of a bantam's egg.

Passiflora Comte Nesselrode.—Of stronger habit than the preceding, foliage slightly larger, and of a much deeper green, flowers reddish, green, and purple. It is one of the most desirable varieties, succeeding well in a greenhouse.

Passiflora Impératrice Eugénie, with red, white, and blue flowers, is also free in growth, and is suitable for a greenhouse.

Passiflora Countess Giuglini has fine large white and blue flowers, and is one of the finest of the Passion-flowers, but in a greenhouse it requires time; indeed, according to my experience, though many of the Passifloras succeed after some time tolerably well in a greenhouse, yet from the late growths that are made, and the consequent imperfect ripening of the wood, they are there precarious subjects. They do best in a stove or a warm greenhouse, neither of which I shall take into consideration in these papers, confining myself strictly to greenhouse plants.

The Passifloras thrive in a compost of two parts light fibrous loam, one part sandy peat, and one part leaf soil, with a free admixture of sharp sand. The best mode of training is, perhaps, to allow one shoot or rod to each wire, to permit it to grow to the extent required without stopping, and the side shoots to grow at will; as they do so in a hanging or drooping manner, the effect when in flower is very pleasing. In autumn the side shoots should be cut back to about a foot in length, and in spring, when they begin to grow, cut them back to within an inch of the rod or shoot whence they proceed. It may be necessary for a year or two, at the spring pruning, to shorten the principal shoots to the firm or ripe wood, as their points, from being made late in summer, are not ripened, and they not unfrequently die back in winter. Another shoot as leader will, of course, need to be trained in their place. The shoots I allow to grow at will, only if they do not show flowers at a foot or 18 inches in length, I take out their points. Beyond the shortening of the shoots in autumn, essential to afford light to the plants beneath, and the spurring-in during February, no other pruning is given. When any of the rods become worn out they may be cut clean out, and in their places other shoots trained from the base. From October to March they require to be kept rather dry at the roots, and throughout the summer abundant supplies of water are required, affording top-dressings of rich compost, or about an inch of short manure in May, and again about the middle of June.

Tacsonia mollissima.—Flowers bright shaded pink or rose; very free in growth, foliage bright green, and covered with white down. The flowers, though not equal to those of T. Van-Volxemi either in size or brilliancy, are, nevertheless, very fine. The plant is of remarkably rapid growth. I planted one out last year, and it has grown up a 20-feet and down a 10 feet length of rafter, occupying five wires on two rafters, and the side shoots hang down from the rafter 6 feet, many much more, and at the time I write (the beginning of May) they are showing flowers at every joint. It usually flowers at the close of May and throughout the summer, and it is the very best of climbers for covering a large extent of roof.

Tacsonia Van-Volxemi.—Flowers crimson, very fine; foliage light green, not downy; in habit more slender than T. mollissima, but quite as free in growth, yet it takes more time to establish itself. It flowers almost continuously, but it is well to keep it dry in winter, so as to induce rest.

The Tacsonias should not have the shoots very much crowded, but these may be allowed to hang down if they are likely to become too numerous and crowded on the wires, and in the hottest part of summer they may be taken to the rafter adjoining, making the shoots from the other rafter meet them, and thus festooned they afford not only an agreeable shade but a fine effect. In autumn the shoots should be cut back, confining them to the rafters, and in February all the old shoots, except the main shoot or rod on each rafter, should be cut out, allowing, however, an inch at their base to remain, but leave entire any young shoots at that time not more than from 1 foot to 18 inches in length proceeding from the main shoot or rods, and they will show signs of flowering almost immediately.

Water must be copiously supplied in summer, with the top-dressing recommended for the Passifloras, and in winter give none, except a little to keep the foliage from flagging. The compost recommended for Passifloras suits the Tacsonias.

Both the Tacsonias mentioned produce fruit plentifully, in size and form like a hen's egg; that of T. mollissima is said to be eatable. A dish of the fruit, however well set up, has too much the appearance of a dish of eggs, and as to flavour I doubt it would not please the English taste.

The foregoing are all the climbing plants which I can recommend for extensive roof-covering. Many hardy climbers, as Clematises, &c., fine as they are under glass, and half-hardy climbers such as Cobæa, Mutisia, &c., are also omitted, for the simple reason that they are not greenhouse plants. Some of them are not presentable in winter, whilst others, if too hot and dry in summer, fall a prey to insect pests, and are, in my opinion, undesirable.

CLIMBERS SUITABLE FOR SHORT ROOFS OR RAFTERS.
(10 to 12 feet.)

Dolichos lignosus.—This is a twining plant, evergreen, with pea-shaped flowers, purplish red. It requires to have the shoots well thinned out in summer after flowering, removing the old and weak growths. Water should be abundantly given, with occasional supplies of liquid manure. Soil two parts

fibrous loam and one part leaf soil; good drainage, and frequent syringing in summer so as to keep down red spider. In winter keep the plant rather dry, but not too much so, otherwise the aftergrowth will be enfeebled.

Hibbertia volubilis.—Evergreen twiner. Flowers yellow, early in summer, and indeed very continuously produced. It requires no pruning except thinning out the old shoots, and will succeed well in a compost of two parts sandy loam and one part sandy peat. Water freely when growing, and in winter afford only enough to keep the plant from flagging.

Hibbertia grossulariæfolia.—Very similar to the preceding, having yellow flowers, and being very free in growth.

Jasminum gracile.—Evergreen. Flowers white and sweet-scented. Soil two parts fibrous loam, and a part each of leaf soil and sandy peat. It requires free watering in summer, and to be kept rather dry in winter. It flowers early in summer, after which the flower-stalks should be cut off, and the old wood thinned out or cut back, encouraging growth by frequent sprinklings overhead.

Jasminum azoricum, also with white flowers in summer, and *J. grandiflorum* are the best, the latter being in my opinion the finest of all the Jasmines. It requires to be cut-in rather severely, and is then free both in growth and flowering. It is best to cut it back after flowering, keeping it rather dry in winter.

Kennedya bimaculata variegata.—Evergreen, with some of the leaves marked with white and pink; flowers deep purple, produced abundantly in April.

Kennedya coccinea major.—Flowers scarlet. May and June.

Kennedya Marryattæ.—Flowers scarlet, large and fine. Foliage large, covered with small white hairs, giving a downy appearance. April.

Kennedya Comptoniana.—Flowers blue. April.

Kennedya monophylla.—Flowers purple. May and June.

Kennedya rubicunda superba.—Flowers red. May and June. Free in growth.

The Kennedyas are all very free-flowering evergreen twiners. They succeed in a compost of two parts fibrous loam, two parts sandy peat, and half a part each of charcoal in pieces from the size of a pea to that of a walnut, silver sand, and leaf soil, or old cow dung. Good drainage is necessary, with free watering while growing and flowering, whilst in winter they are best kept rather dry. Cut back the old parts rather freely after flowering, thinning them well out, and encourage free growth by copious waterings and syringings.

Rhynchospermum jasminoides.—Evergreen. Flowers white and sweet-scented, produced in June and July. It requires a compost of equal parts of sandy loam and peat, and one part of leaf soil. Water the plant freely when it is growing, but keep it moister in winter than is sufficient to preserve the freshness of the foliage. Pruning should be confined to thinning out the shoots when they become too much crowded. The variety with variegated foliage is pretty. Afford good drainage.

Solanum jasminiflorum.—Evergreen; flowers white, very pretty, produced throughout the summer. Water it freely when growing, keeping it rather dry in winter. It requires good drainage, with a compost of equal parts of sandy loam and leaf soil, and a fourth part of sand. Cut away the old shoots as they become lank and bare, encouraging fresh from the base. S. jasminoides has pale purple flowers.

Sollya linearis.—An evergreen, very pretty, blue-flowering climber.

Sollya heterophylla.—With larger foliage, and fine blue flowers.

Both of these Sollyas flower in summer, when they should be well supplied with water, and free growth encouraged by frequent syringings. In winter keep them rather dry. Thinning out the shoots is the only pruning required. For soil use equal parts of fibrous loam and sandy peat with good drainage.

Tropæolum Triomphe de Gand.—Flowers orange scarlet. Of straggling growth, but desirable as a free continuous bloomer. Soil sandy loam two parts, one part each sandy peat and leaf soil, with a free admixture of sharp sand, and good drainage. Water moderately, especially in winter, and when growing and flowering freely water only when the soil is dry, and then afford a good supply. The main point is to keep training from the base fresh shoots to replace those which are old, for these when exhausted should be cut away.

All the above succeed either planted out or grown in pots, but I would prefer planting out in borders, for they are then not so liable to suffer from neglect of watering; besides, they grow more freely, and are in every way better.

If grown in pots they will require to be shifted from the small pots in which they are received, and until they require a 9-inch pot they may have a shift when they are beginning to grow, and again in July, the object being to bring them into a flowering state as soon as possible. From a 9-inch pot they may be transferred to an 11-inch pot, and this will serve any of the plants named in this section for two years, the surface soil being removed and top-dressings of fresh compost given as required. Subsequently they will need repotting every year, or, with the top-dressings, every alternate year, and in the case of those flowering in summer the potting should take place before the plants begin to grow in spring, whilst those which flower in spring will be left until the flowering is past. By the spring-flowering climbers I mean those which flower from February to June. In repotting, the ball should be reduced as much as it can be, taking care, however, to preserve as many roots as possible, and very frequently the plants may be returned to the same size of pot as that in which they previously were. In the case of the ball being too large to go into the same size of pot without admitting of at least an inch of soil all round, there is no alternative but to use a larger size of pot. In all cases the watering after repotting should be moderate for a time until the roots are growing freely in the fresh soil, and then the supply should be liberal. The drainage must be good. To preserve the foliage in good health frequent syringings will be beneficial whilst the plants are growing, and occasionally liquid manure when they are in a growing state, or advancing for flowering, always making sure that the pots are full of roots before resorting to waterings with liquid manure. —G. Abbey.

DAMSONS.

I am accused by "Inquirer" of calling the Prune Damson oval, small, and much esteemed in the north; Cluster Damson good and fertile, &c. I leave the quotation as it is, page 365. The paragraph descriptive of the Prune Damson was written many years since when on a visit to my old friend Mr. John Pearson, with whom I used to argue on the superiority of our Hertfordshire Damsons, which I then thought larger and better than the Prune Damson. Since its cultivation here I have given it a preference on account of its being larger than in the north and of fine flavour, and I think I have more than once owned this to friend Pearson; but the paragraph has remained as it was written years ago because it is so true, and there it shall remain.

As to the merits of the Cluster Damson I have said nothing to disparage it, and so "Inquirer's" friends need not be provoked because they have spent, say, £5 or more on trees of Cluster Damsons. They may rest assured that all I have said about it is true, and I have not "written up another."

I have written about fruits for forty years, and feel great pleasure in having been as changeable as the wind; for if a variety of any kind of fruit after giving good promise has declined in flavour after being acclimatised, I have honestly told the truth. Dr. Hogg is the only authority to "give some explanation" of my changes of opinion, for he has all my catalogues and all my writings. I never stop to consider what I have written, but write my impressions while they are warm. Mr. Robson gave a challenge as to the productive qualities of the Cluster Damson, which I thought fit to take up. Its fertility is remarkable, and it will sell as well in the market as the Prune Damson, at least in London, but it is not so large as our Hertfordshire Damson, which has been on my estate for at least 130 years.—Thos. Rivers.

EUCHARIS AMAZONICA CULTURE.

Having this year had better success than usual in flowering the Eucharis amazonica, I send you a detail of my mode of treatment.

Early last December I shook out four bulbs, washed their roots, and repotted them in an 11-inch pot, using a compost of one-half turfy loam and one-half well-rotted cow dung. I then put them in a warm stove. They lost some of their leaves, but soon recovered, and grew luxuriantly. At the beginning of March two of the bulbs threw up strong flower spikes, each bearing five or six blooms. The largest flower measured 4½ inches in diameter, and the leaves were 15 inches long by 8 inches wide. After flowering I put the plant back in the stove, and all four bulbs have now thrown up strong flower spikes, and have six flowers fully open and seventeen in various

stages. The flowers are quite 4 inches in diameter. Some weaker bulbs, potted at the same time in the same compost, are now throwing up strong spikes, and one in a small pot is just past its best.

I attribute the free growth and flowering entirely to the rich compost, as in other seasons I have only managed to flower a few bulbs, and never more than once a-year.—J. W. Davis, *Hazelwood, Upper Norwood.*

HARDINESS OF DR. HOGG STRAWBERRY—STRAWBERRY CULTURE.

I received this variety from Mr. Turner, of Slough, as soon as it was in commerce; it has been grown out of doors every winter since that time, and I have not observed a single plant of it injured by frost. During hot dry weather in summer this variety is more liable to die off than some of the others. Attention to watering the plants when they require it will prevent this to a large extent. It requires good cultivation, and should be replanted every second year.

My method of cultivating Strawberries out of doors is this: Early in July I layer in 3-inch pots as many runners as are required, and as soon as they are well rooted I plant them out 2 feet apart in deeply trenched and highly-manured ground, and the best Strawberries will be obtained in the following year. Last season was a trying one for Strawberries owing to the excessive drought, and yet a bed planted at this place from the previous year's runners, and containing upwards of a dozen sorts, is now a perfect sheet of flowers. Not a plant has died from frost, and only one variety suffered—a new one received last year from Paris, and named Alexander II. The plants of this were much injured, but are now recovering. Sir Charles Napier is also somewhat tender, and too acid for dessert. La Constante is likewise a little deficient in flavour. President Wilder, raised from it, is much superior in this respect. Lucas, both for pots and out-of-doors culture, is a remarkably fine variety. If your correspondent who inquires has not already procured them, let him add the following to his collection:—President, Lucas, and Mr. Radclyffe—this variety cannot be distinguished from British Queen, but as it is a seedling it may succeed where that variety fails. It does well here both in pots and planted out. Frogmore Late Pine is the best late sort, and is also a good Strawberry for pot culture. All these combine high flavour with hardiness.—J. Douglas.

ROYAL BOTANIC SOCIETY'S SHOW.

May 25th and 26th.

The May Show of this Society was held on Thursday and Friday last, and notwithstanding the counter-attraction of Epsom, the weather being extremely warm, and on the whole very favourable for an out-door exhibition, there was a good attendance of visitors. Following so closely as it did on the shows at Kensington and the Crystal Palace, a large proportion of the plants exhibited had previously figured before the public, and if they were not so numerous as we have seen in some former years, they were admirably arranged, forming in the great tent one of those beautiful scenes which one always looks for at the Regent's Park. The introduction of a neat fountain playing in the centre gave, besides, a welcome air of coolness while there was a burning sun outside.

The large specimen Stove and Greenhouse Plants were, with few exceptions, the same as those shown at the Crystal Palace. Mr. Ward, gardener to F. G. Wilkins, Esq., Leyton, took the lead for nine with Phœnocoma prolifera Barnesii, Tetratheca ericæfolia, Statice profusa, and others noticed last week, large and in beautiful condition. Next came Mr. Chapman, gardener to J. Spode, Esq., Hawkesyard Park, Rugeley, and third, Mr. J. Wheeler, gardener to J. Phillpott, Esq., Stamford Hill. For six plants the prizes went to Mr. Wright, gardener to H. Compton Roberts, Esq.; Mr. J. Wheeler; Mr. Carr, gardener to P. L. Hinds, Esq., Byfleet Lodge; and Mr. G. Wheeler, gardener to Sir F. Goldsmid, Bart., M.P., Regent's Park. In these collections we noticed good specimens of Boronia pinnata, Chorozema cordatum splendens, Stephanotis, Aphelexis, Eriostemon buxifolium, and Dracophyllum gracile. In the nurserymen's sixes equal first prizes were awarded to Mr. Williams, of Holloway, and Messrs. Jackson, of Kingston. Anthurium Scherzerianum from the former was very effective. Groups of twenty in 8-inch pots consisted of small plants, and were ineffective. Messrs. Jackson and Messrs. Rollisson were the successful exhibitors, the latter also being second for the best group arranged for effect, Messrs. A. Henderson & Co., of Pine Apple Place, being first with a collection tastefully set up.

In Heaths, Mr. Ward was first with an excellently-bloomed, very evenly grown collection, the other prizetakers being Messrs. Jackson and Son and Mr. J. Wheeler.

In Pelargoniums Mr. Ward likewise carried off the chief honours for nine; his splendid specimen of Rose Celestial was apparently as fresh and beautiful, certainly as full of flower, as it was a fortnight previously. Mr. Weir, gardener to Mrs. Hodgson, and Mr. James, Isleworth, took the second and third prizes. In the nurserymen's class for nine Messrs. Dobson were first with well-bloomed plants; and in that for twenty of distinct varieties the best collection came from Mr. Turner, of Slough. Most noteworthy among his varieties were Troubadour, Gratulation, Hermit, Corsair, Favourite, Claribel, and John Hoyle.

Azaleas were in several instances better than at previous shows. For large specimens the prizes went to Mr. G. Wheeler, gardener to Sir F. Goldsmid, Bart,, Mr. Chapman, and Mr. J. Wheeler among amateurs; and in the nurserymen's class Mr. Turner, Mr. Williams, and Messrs. Jackson & Son were the successful competitors. The former had, with but one exception, the bush-headed dwarf standards which he showed at Kensington a year ago, with heads forming a dense mass of bloom. For twelve in 12-inch pots Mr. Little, gardener to J. Goddard, Esq., Roydon Lodge, was deservedly first with compact little pyramids beautifully grown and flowered. There was also a class for three Azaleas grown without stakes or other artificial support. In this Mr. Turner was first with three bush-headed specimens of Coccinea major, Cedo Nulli, and Marie Vervaene. These were beautiful masses of bloom, the first in particular had a splendid head of glowing scarlet flowers. Mr. Little was second.

Of Rhododendrons in 12-inch pots Messrs. Lane, of Great Berkhampstead, were the only exhibitors, and they had a first prize for plants in profuse bloom for their size.

Roses as shown by Mr. Turner and Messrs. Paul & Son comprised specimens which have never been surpassed and rarely equalled. Charles Lawson, Juno, Souvenir d'un Ami, Duchesse de Caylus, Miss Ingram, Marie Baumann, Victor Verdier, Dombrowski, and Madame Victor Verdier were the varieties shown by Mr. Turner. In Messrs. Paul & Son's collection Charles Lawson, Victor Verdier, Alfred Colomb, and Anna Alexieff were conspicuous by their excellence. Mr. W. Paul and Messrs. Paul & Son exhibited boxes of fine cut blooms. Maréchal Niel from the latter was remarkably fine. The Roses shown in the amateurs' class were much better than usual. Mr. Terry, gardener to A. G. Puller, Esq., had excellent specimens of Charles Lawson, Baronne Prévost, and Gloire de Dijon, though the foliage was not of that healthy deep green which we find almost invariably in Mr. Turner's specimens. Mr. Goddard, who was second, had large plants of Souvenir d'un Ami, Madame de Cambacérès, and others of less size, but well bloomed. Messrs. Paul & Son had in the miscellaneous class fine specimens of Mdlle. Thérèse Levet, Souvenir d'un Ami, Madame Willermoz, and some others.

Orchids comprised good examples of Odontoglossums Blunii and Phalænopsis, Oncidium bifolium and Lanceanum; Cypripediums, Cattleya Mossiæ, Lælia purpurata, Saccolabiums, Aërides, Phalænopsis Lüddemanniana, and among others from Mr. Bull was Cypripedium niveum with six flowers. A much finer specimen of this was figured and described in pages 338 and 339. The prizes for nine went to Messrs. Ward, Burnett, Bull, and Wright; for six, to Mr. Williams and Mr. Bull among nurserymen; and to Mr. Hill, gardener to R. Hanbury, Esq., The Poles, Ware, Mr. Godfrey, gardener to J. Anderson, Esq., Staines, and Mr. J. Wheeler among amateurs.

Among Exotic Ferns, very good plants of Alsophila excelsa, Lomaria gibba, Cibotium Schiedei, Gleichenia flabellata and spelunceæ, and Adiantum tenerum were shown by Mr. Wright, Mr. Carr, Mr. G. Wheeler, Mr. Pearce, and Mr. Hill in the amateurs' class, and by Mr. Williams in that for nurserymen. The best pair of tree Ferns came from Mr. G. Wheeler; Mr. Cole, gardener to S. Budgett, Esq., Ealing Park, being second with two beautiful specimens of Lomaria gibba, the very picture of health.

Prizes were also offered for collections of twenty-four hardy herbaceous plants belonging to not less than six genera. By far the best collection came from Mr. R. Parker, of Tooting, who had beautifully-flowered Pyrethrums of several varieties; Iberis contracta, a fine white Candytuft; Veronica urticæfolia, blue; Alyssum saxatile compactum, a close mass of golden flowers; Pæonies, and other plants. A third prize was given to Mr. Ware, of Tottenham, the second being withheld.

For herbaceous Calceolarias in pots not larger than 8 inches Mr. James was first with plants in remarkably fine bloom. Mr. Goddard, gardener to H. Little, Esq., Twickenham, would have come second but for the fact of one of his plants being in a pot larger than the regulation size, for which oversight he was very properly disqualified, receiving, however, an extra prize, the second being withheld, and the third going to Messrs. Dobson, of Isleworth.

Of miscellaneous subjects not already noticed, Mr. Turner sent fine examples of Lilium auratum, also Tricolor Pelargoniums; Messrs. Lane, Rhododendrons and Azaleas; Mr. William Paul, of Waltham Cross, variegated Pelargoniums and his new Rose Princess Beatrice; Mr. Needle, gardener to the Comte de Paris, a collection of Orchis and Ophrys; Mr. Ware, hardy herbaceous plants with ornamental foliage; and Miss Squires, York Gate, Regent's Park, a very well-grown plant of Adiantum cuneatum.

Of new and rare plants numerous collections were exhibited by Messrs. Veitch, and Mr. Bull. Messrs. Veitch had botanical certificates of merit for Dracæna porphyrophylla, Dracæna Mooreana,

Dracæna magnifica, Croton Johannis, Agave festiva, Agave horrida hystrix, Agave Regelii, Agave Besseriana candida, Agave Kerchovia macrodonta, Agave Roezliana, Fremontia californica, with large yellow flowers, which were first produced, we believe, at Messrs. Veitch's nursery in 1865; and for Dioscorea retusa, with a greenish, catkin-like, agreeably-fragrant inflorescence, and a neat plant for a pot trellis. Like awards were made to Mr. Bull, for Cypripedium niveum, Primula japonica, Primula japonica splendida, Primula japonica lilacina, Primula japonica carminata, Primula japonica alba, Antharium Scherzerianum Dixoni, Malortia simplex, Dæmonorops cinnamomea, Hydrangea stellata prolifera, Hippeastrum pyrochroa, Elaphoglossum Herminieri, and Arenga Bonnetii. Also to Mr. William Thompson, of Ipswich, for Collinsia violacea; to Messrs. A. Henderson & Co., for Phyllanthus mimosæfolia; to Mr. B. S. Williams, for Adiantum Capillus-Veneris crispulum, Caryota truncata, and Dracæna Liervallii; and to Messrs. E. G. Henderson & Son for Thalictrum adiantifolium, the foliage of which is beautifully divided. Mr. Nye, gardener to E. Foster, Esq., Clewer Manor, who exhibited a collection of fine seedling large-flowered Pelargoniums, had floricultural certificates for Conquest, Cæsar, and Blue Bell; Mr. Turner, for Silver Tricolor Mrs. Rousby; and Mr. W. Paul, for Virgin Queen, white-flowered.

The Rhododendrons and other American plants of Messrs. John Waterer & Son, gave promise in another week of affording a fine display; at the time of the Show, however, but few of the flowers had advanced beyond the half-expanded bud state.

SOME VINE COMPLAINTS AND THEIR REMEDIES.

We this season lost a valued Dutch Hamburgh Vine which had been grafted on a Chasselas Musqué, and which produced fine bunches and berries. We could assign no cause, except the gnawing of the stem all round, and pretty deeply at the surface of the ground, by mice and rats. We rather think that the death of some of the Vines referred to by correspondents, may be owing to a similar cause. Washing the Vines with strong mixtures at all hot, or even after these have been boiled together, is often dangerous. We seldom have had Vine stems touched that were planted inside the house, a plan we would practise wherever we could, as the Vine stems are safer in every way. As respects washes for dormant Vines, or comparatively so, we revert more and more to simple applications. Warm water as a wash is still one of the best and safest insect-killers. If the object of the smearing be to seal up any eggs of insects that may be present, we question very much if any composition whatever is better than thinnish clay paint. If made with soft-soap water, say 2 ozs. of soap to a gallon of paint, the paint will go on more easily and crack less.

Three things we have been requested to notice as respects Vines. "A." is alarmed because there are little white beady dots like heads of pins along the shoots of his young Vines. He may rather rejoice. Such appearances are the signs of healthy vigour, and as the growth becomes less luxuriant, and the wood attains more firmness of texture, they will all disappear, and leave little or no trace behind them. Many of the shoots in our orchard house are beaded thus all over, though from first to last they have had little soil to grow in, but they receive several rich waterings during the season, besides what escapes from Strawberry pots set along the front.

"B." finds that every morning the sharp points of his Vine leaves, in a house to which hardly any heat is given, are loaded with dew drops, and he is afraid of scalding. This is also a sign of health and vigour, as no diseased or unhealthy leaf will condense the vapour around it as a healthy leaf will. In some of these warm mornings it is quite delightful to notice the edges and points of Cauliflower and Strawberry leaves loaded with dew points. Such appearances on the Vine leaves show also that there is a good deal of atmospheric vapour in the house. The colder the points of the leaves become, the more thoroughly will they act as condensers of the vapour. An extreme of cold would lead to the formation of ice drops. More heat with less moisture in the house would so far prevent the leaves acting so freely as condensers. There is no danger of scalding provided air is given sufficiently early to prevent the sun acting on a confined atmosphere, and if, in addition, in a cold morning a little artificial heat is given along with the air, so that the leaves become dry before the sun shines strongly on the house. The mere dewing of the foliage is a thing to be glad of in general circumstances. Of course there may be special exceptions, such as Strawberry plants grown in pits, where, if even air were not given during the night, and a little more heat maintained, the dewing would be so excessive on the foliage as to tend to damp the fruit too much, or even clog the blossoms. Before the bloom opened it was all desirable enough. In larger houses, and the leaves farther from the glass, there would be less of this heavy dewing.

Lastly, "C." is alarmed because in one of his houses where he is forcing, the Vine stems are throwing out threads with whitish points like roots, and some advise removing them, and some encouraging them, and he wants to know the reason of their growth, as they never appear in a late greenhouse vinery where the Vines break naturally. The Vine is naturally a climbing plant. It is not desirable that it should be so in cultivation. The presence of these air-roots always proves one of two things, generally both—viz., a goodly amount of atmospheric moisture in the house, which entices the roots to protrude, and, again, a want of free reciprocal action from the roots in the soil. Less use of evaporating-pans, more air, and more free root-action would reduce these roots from the stem to a minimum. Our impression is, that the more they are encouraged the less will the roots grow and take up from the soil. To prevent anything like sudden checks, the removal of the aërial roots should be effected gradually—not all at once. We have seen pots of soil and balls of moss suspended beneath them, so as to give additional strength to certain branches and parts, but we can hardly say the results were ever very astonishing. It takes a considerable time before aërial roots produce fibres. The more vapour from evaporating-pans, &c., the more freely will they grow. Like our correspondent, we rarely see them in late houses. We have no recollection of seeing any in an unheated orchard house. In such cases there is generally more air with less atmospheric moisture, and less difference as respects the temperature of the roots and branches, than is often found in early-forced vineries. Our opinion, then, is, that in early houses such roots in moderation need give no alarm, but, on the whole, we would rather not see them, and to encourage the proper roots we would remove the aërial roots from each Vine gradually.—R. F.

RABBITS versus CUPRESSUS LAWSONIANA, AND ABOUT OTHER CONIFERS, &c.

I am sorry I cannot endorse what Mr. Abbey has stated respecting this tree, for here we find the rabbits injure it much, although not nearly to the extent that they do other Conifers. Out of three or four score trees from 4 to 12 feet high I can only find three or four which have been left untouched; some of them have been completely cleared of their branches for a foot from the ground. To say whether it is done for food I cannot, but I often find much of the spray on the ground. It has surprised me to see the size of the branches which these little fellows will nibble off, often the size of one's finger. The height, too, at which they will manage to bite off the branch or the centre of a tree without the aid of snow is remarkable. I have just measured some branches from 2 feet 6 inches to 3 feet from the ground, cut off in a manner that would vie with the operation performed with a sharp knife. I cannot account for the rabbits not eating Mr. Abbey's Cupressus Lawsoniana, but it is an addition to our knowledge of the queer propensities of "bunny;" for how often do we see a few trees of the same sort near each other, one will be eaten bare and another not touched; but let a rabbit nibble off a bit and leave it on the ground, or perform a little in the way of examining the roots, and every one which comes that way will follow in his wake until there is nothing left, or the tree is laid prostrate on the ground.

Another strange propensity of the rabbit is to attack a newly planted tree with greater relish than one which is established, although the established tree might be one of its favourites; hence the necessity of protecting, at least for a year or two. Still, I know not which is the more displeasing to the eye—trees deprived of their under branches (which in the course of a few years, as the upper branches weigh down, will leave nothing wanting if the tree is of a spreading habit), or to have them surrounded with a variety of contrivances to protect them from vermin, but also hiding them from the eye that they were put there to be admired by. This renders trees useless for ornament. It would be considered folly for a painter to take great pains in producing a good picture and then to have it framed with larch poles. The eye of the spectator would be drawn first to the frame; should he be induced to look into the picture to detect its merits he would immediately exclaim, "How absurd it was to use such a frame!" It is just the same to plant a handsome tree and barricade it with things so unsightly in their appearance; to do so may be excusable in the case of a fruit tree, because the mind would conceive that the object

was not beauty but utility. We seldom see fruit trees surrounded by guards if they are liable to be attacked by rabbits, for the guard is put round the boundaries. Why not do the same with ornamental grounds? for I am certainly one of those who think there are very few subjects not liable to be attacked either by rabbits' mouths or feet. Once a good wire fence is put up, give the gardeners permission to keep them down; few will be left to do any harm. Of course I am now referring to pleasure grounds and the like.

Not less objectionable are the many large stakes we too often see, many of which are larger than the tree they are intended to support; and some persons are not contented with one, but must have two, frequently not required, and oftener counterbalancing the good they do by their evil in rubbing against the bark—the least friction means death to the branch of a Conifer. Many are the specimens spoiled by it, and quite as many have had their heads blown off in consequence of the cord not having been loosened in time; it also takes away the idea of the tree being a native plant, which I think all trees should appear to be. All plants should be self-supported, and if planted properly when young will be so more frequently than many suppose. If it is necessary to have support the most convenient way is to have a collar round the tree with three pieces of wire attached to it, and fastened to pegs placed in different directions in the ground. This method is to be recommended as much for its neat appearance as for the welfare of the tree. It prevents much friction, consequently there are no dead branches. I have often thought that a collar similar to that used for dogs would be a great convenience, so as to enable a person to draw it in or let it out at will. I imagine that a steel band inlaid with an elastic substance such as gutta percha would answer well. Cannot some person invent such a thing?

I will just note in addition to what I have said as to rabbits attacking one tree and leaving another of the same variety, that the same occurs with different species of the same genus —for instance, the Thujopsis. I never found them touching T. borealis, even during the last severe winter, and that, too, where newly planted out in a wood. On the other hand, Thujopsis dolabrata cannot be left without protection. I find that rabbits clear all the Thujas and Biotas; indeed these two classes seem to be their titbits, with the exception of Thuja gigantea. We have several dozens of this planted out in all sorts of situations, but I never find one touched. I noticed with regret how fond rabbits are of the Irish Juniper (Juniperus hibernica), they have cleared dozens for us, whilst on the other hand they scarcely touch the Swedish Juniper (J. suecica). I could enumerate others, but those named are most permanent in my mind at present.

With the name of the best of all rabbit-proof trees unfortunately I cannot furnish you, but I think it is a Cupressus. I have sent to many, but they all furnish me, to my knowledge, with the wrong name; indeed several nurserymen who have been this way are equally ignorant. I have enclosed a sprig for your opinion. [It is Retinospora pisifera beyond a doubt. —Eds.] It is a remarkably fast-growing handsome tree, which the rabbits never touch. We have here many dozens of them planted out in all situations and soils, but a dry bog suits them best. The tree throws out its branches horizontally; the young growth is pendulous, and straightens out with maturity. It is of very bushy growth, being almost as broad as it is high, much the same in form as a Cedar or a Cupressus macrocarpa, which we do not find eaten by the rabbits. The foliage is rather lighter than that of the American Arbor-Vitæ, but it does not turn off so brown in winter. It is remarkably hardy, and strikes easily by cuttings. It is altogether a first-rate Conifer, and ought to be in every collection.

The difficulty in ascertaining the name of this plant brings to my mind how little is known by gardeners and even nurserymen of Conifers, beyond a few of the most popular Picea, Pinuses, and Cupressuses. If we find a person who can recognise seven or eight he is "well up." I had occasion to send for a couple of dozen of Pinuses, &c., to a large nurseryman this last season. The answer was for several of them, "We are quite sold out;" indeed, of some I sent for they knew nothing, and others were really not fit to be sent anywhere but to the rubbish heap, being more dead than alive. As to roots, after the amputation they received from the spade there were very few left. With regard to the frequent transplantation which we see stated in the catalogues, I fear it is oftener said than done, at least except in the case of the few popular species mentioned above. Reform is urgently wanted.

I have been thinking very much lately about tubs, or rather wooden baskets, which were in vogue some years ago. It is much the safest plan to have trees in them, but they appear to be dispensed with, as I am informed, for two reasons. First, purchasers are not willing to pay the extra carriage, but this drawback is well compensated by safety in removal and the little check experienced; and if the tree is to be planted in an unfavourable situation the loss of two or three years' growth is prevented, if not the life of the tree saved. The second reason was that the iron hoops around them are considered by some to be very detrimental to the trees. My informant quoted as an instance some of the Araucarias planted at Bicton not doing so well as could be wished through this, as some suppose; but to my knowledge the major part of them are doing very well. That is no reason why such tubs should not be adopted, as bad results can be easily prevented by cutting the hoops in two or three places after the tree is put where it is to grow.—J. T., *Maesgwynne, South Wales.*

DESTROYING WORMS AND MOSS ON A LAWN.

I see a question asked in your Journal this week, How to get rid of moss in a shrubbery? In reply the following may be useful. My lawn was much infested with worms, which rendered it necessary to sweep it almost daily to look at all well; there was also a great quantity of moss on it. To destroy the worms I had it well watered with a solution of corrosive sublimate, about a teaspoonful powdered to eighteen gallons of water, and I find that, as well as destroying the worms, which were swept up in gallons, all the moss is also destroyed and the grass uninjured.—Philip Crowley, *Waddon House, Croydon.*

[Your query you will see replied to by our answer to another correspondent.—Eds.]

WATER SUPPLY AND STORAGE.

The best mode of economically securing a sufficient supply of water is becoming every day of more importance in those districts where there is no running stream near. "Why don't you drive some tubes into the ground, on the American pump principle, as they did lately in the war in Abyssinia?" says one; but we should have to drive 300 feet before we could reach any water to pump. "I am surprised you do not have Artesian wells, they would yield you such a supply," said a scientific lady. Occupying as high ground as any within some miles of us, it would be rather a singular thing to find water bubbling up under such circumstances from a moderate boring. True, we have found lakes and reservoirs of water on the tops of hills, but that is rather an exceptional circumstance. Where the water is near the surface, there is no plan so simple and economical for securing water as sinking a well, or driving down a tube; but it is a serious matter when you must go down some hundreds of feet to reach the water-level. Under such circumstances the contest between the merits of wells and tanks and reservoirs is likely to be quite as animated as that between hot-water pipes and hot-water tanks for gardening purposes. One of the great drawbacks of deep wells is the fact, that there is ever a liability to expense in the breaking of machinery, and in proportion to the depth the difficulty in reaching the water, securing fresh air for workmen, &c. The tank is often the simplest and the best.

Some time ago we detailed how a large building and brick-making firm effected a great saving, when, instead of carting water a long way uphill, and a steep hill, too, they set apart an acre of ground, and had it laid on a uniform slope, so as to tend to a rough tank at one point, covering the ground with a thin layer of concrete rolled firmly. From that space of ground in the driest of these summers they have had abundance of water for a large brickfield.

On a neighbouring estate occupying an elevated position, the water question was every year becoming more serious as respects farm, garden, &c., and some years ago a place pretty well an acre in extent was fixed upon, a reservoir built of bricks and cement, and the drainage of from one to two thousand acres conveyed into it, and there has been no scarcity of water since. Even last summer, dry as it was, only lowered the level of the water in this reservoir a few inches. The cost of digging, brick and cement, and labour, was, we are told, £1000, but it has proved to be money most profitably laid out. Carting has chiefly been resorted to, but with a small force pump, and the necessary piping, the water could be sent over all parts of the establishment. Of course, those who can secure water otherwise have no occasion to go to such expense; but in many

cases collecting and saving the water in reservoirs would be much more economical than deep-well-sinking, and the water will generally be soft and pure.

Many simple modes of storing water may be resorted to, as a natural pond with grassy sides, a clay-puddled pond, &c., but nothing beats brick and cement. We are sorry that accounts of failures reach us, and we are not surprised, as the work is often carelessly done. We have little preference, but we would prefer good Roman to Portland cement. Then the sand used should be limited in quantity, very clean washed, and sharp. The bricks should be laid in the cement as well as plastered over when laid. Very little cement should be moistened at a time. It will not wait like mortar. Lastly, only good bricks should be used, and they ought to be thoroughly soaked, so that no air-opening may be left before they are laid in the cement. Where air can go water will go. Dryish bricks, and inferior cement mixed with muddy sand, are the chief causes why some brick tanks do not hold water much better than a mud hole.

Some time ago a gentleman was to show his friends all about tank-building. He built his walls 9 inches thick in first-rate mortar, and had 9 inches of clay puddled outside the bricks, and then when finished he had the joints inside raked a little, damped the bricks, and covered with about a quarter of an inch of cement. The cement cracked, and then the bricks acted as so many sponges to let the water escape. Except after a heavy rain the tank holds little water.

As regards covered tanks, the form in which the walls are built matters but little—the circular is the strongest, only if very large, whether square or circular, they would be better of an open wall or arch across. Were we in future building them of a large size to be left open, as a reservoir, we would slope the walls outwards instead of building them perpendicular. Wet and frost in the neighbouring ground have then less influence on the walls. Heavy clay round such walls tries them more than any other soil by expanding and contracting. For all gardening purposes commend us to an open tank instead of any well water. Cement tanks, when shut up from air, will have a tendency for a long time to make the water hard. For some years after building it is well to protect the walls of open tanks a little in winter. Wheat straw laid on so as to hang over the wall a foot or 18 inches, fastened with poles laid across the other ends, will generally be sufficient. Evergreen boughs would also serve the same purpose. In severe frost it is advisable to break the ice to lessen the expansive force against the walls. It is well also to draw enough of water so as to leave a space between the ice and the water. This lessens the expansion and keeps the body of water warmer. These may seem very trifling matters, but the neglect of them has injured many a brick-and-cement tank the first winter. The earlier such tanks are built in summer the better generally they will stand.—R. F.

SOME PREDATORY INSECTS OF OUR GARDENS.—No. 9.

Somebody tells a story about a traveller who, when he entered an hotel and was about to inscribe his name in the visitors' book, started back in horror and took his departure at once when he observed a certain insect which I need not name walking over the pages. "He had been bitten before," as he observed to a friend, "and had taken it patiently, but this was too much. It was the first hotel he had been at where they came down to see where you were going to take up your quarters!" Whether some mysterious intelligence is conveyed to the realms of the insect world concerning what is printed in this Journal and who writes there I do not exactly know, but it looks at the present time very much as if Abraxas grossulariata was revenging itself upon the author of "Some Predatory Insects, &c.," and changing his plural into a singular to make it have a personal interest. In truth, the caterpillars of this moth have abounded within my rather limited domain to an extent unparallelled in my experience hitherto, though now reduced by some hundreds through diligent hand-picking. So, good reader, if you are ever tempted to attack insects in print, have a caution that they do not retaliate upon you in a rather unpleasant way. I may add, that having occasion to visit a friend in Surrey, I find that though he is resident only three miles off from my garden plot, he has on his bushes scarcely any of the caterpillars of this moth, showing that the species is not so prolific generally this season.

We saw in April the first appearance of butterflies in the form of the well-known Garden White; now its larger and stronger-winged relative, the Large or Cabbage White (*Pieris Brassicæ*) is beginning to emerge from its winter tarry in the chrysalis state, and disport itself about the gardens, to the delight of youngsters and the disgust of the horticulturist. The females in particular are soon ready to deposit eggs, which are usually placed in patches of from half a dozen to a dozen. These are placed almost invariably upon some one or other of the cultivated varieties of Cabbage, and, as they are fastened by the base, when we look at them with a hand-magnifier they resemble miniature ninepins. Another author thinks them like an Indian tom-tom, and a stronger magnifying power will show that they are not only ribbed, but marked with delicate lines. These adhere pretty firmly to the leaf, and it is well worth the gardener's while to devote a little time to searching after them, not so much to admire them as to prevent all possibility of their producing caterpillars.

On the wing the perfect insects of Pieris Brassicæ seem in some positions to show a yellowish tinge from the circumstance that the under side of the hind wings is yellowish white; but there is not sufficient of that colour to warrant the comparison which some think gave rise to the designation "butterfly" as a general term for such insects. The most notably yellow species, the Brimstone, is rarely seen in sufficient abundance about gardens to attract particular notice. Others will have it that the name was given to these "children of the sun" because they are about in most profusion just at the season when butter is obtained in the greatest quantity. But I must acknowledge that neither of these explanations seems to me satisfactory, yet I cannot offer any other. The spring brood of Pieris Brassicæ was at one time thought to constitute a different species, the tips of the fore wings being usually lighter than are those of the second brood which, according to temperature, comes forth in July or August. I have fancied, also, that the early individuals are more lively on the wing than the butterflies which have to endure the fervid heats of summer. In some seasons there are more successions of the species; for instance, in the remarkable year 1868 the butterflies were out almost uninterruptedly till quite late in autumn, and the caterpillars swarmed on the garden Nasturtium in October and November. Indeed, up to November 15th they were feeding, and some quite small; after that I lost sight of them. This would lend some support to the statement that caterpillars as well as chrysalids are occasionally to be found in the winter. It is rarely that these caterpillars touch plants which do not belong to the Cruciferous order, though I have seen a party of them experimenting on the Hawthorn by way of change. One of the notable peculiarities of Pieris Brassicæ while a caterpillar is its cleverness in finding its way back again to its food-plant when dislodged from it. Bending in a sort of half for a minute or two, it is soon crawling rapidly, and seldom fails in directing its course to very nearly the same spot where it was feeding. When young the caterpillars are often not distinguished from those of Pieris Rapæ by the gardener; when older the superior size establishes the difference, as well as the three distinct stripes and the numerous dark markings.

The fact is now well established that migrations of this butterfly take place in some years, accounting for the sudden appearance of swarms of the caterpillars in places not previously infested by them; and it can even venture across the ocean, as in the instance noted by Mr. Thorncroft, corroborating other instances which had rather been doubted. Mr. Thorncroft says that being on the coast one day in the afternoon, there came in a troop of Pieris Brassicæ mingled with Rapæ. "There must have been hundreds within a very short space of time; but what surprised us most was their alighting or settling on the sea with expanded wings, and the ease with which they rose again. They all came in direct from the sea from a south-westerly direction."

The caterpillars of P. Brassicæ, though not like the perfect insects at all inclined to locomotion, do sometimes under the pressure of hunger wander in parties in search of "fresh fields and pastures new." In the Isle of Wight some years ago, an entomologist reports that they spread themselves from the district where they first appeared over the adjacent country, crawling in companies over roads and paths, and even climbing over garden walls. On the Cabbages and Broccoli nothing remained but stems and fibres. No doubt the excessive multiplication noticed in some years is favoured by the absence or diminution of the parasitic enemies, which do more than man can effect to keep down the species. Especially are the labours of the ichneumon fly (Microgaster glomeratus) deserving of our

thanks; though it does not retard the growth of the caterpillar to maturity, it never permits the emergence of the butterfly. The silken cocoons are to be seen often enough on palings, attached to the writhing caterpillar. I believe, also, that a Dipterous insect of larger proportions has helped to thin out the caterpillars of P. Brassicæ, which, unlike those of some others of the Lepidoptera, seems devoid of all power of defending itself from insect foes. Sparrows, also, if tolerated in gardens, will do a good work, picking up caterpillars of all ages, and even the eggs, according to one authority. They have also been seen to take, off palings and walls, the soft chrysalis just transformed. The removal of the lower leaves on the infested plants does something towards diminishing the number of caterpillars, these being their favourite resorts at first. A remarkable device has been suggested, to the following effect—"If in a patch of ground where Cabbages are to be planted, some Hemp seed be sown all around the edge in the spring, the strong smell which the plant gives off will prevent the butterflies from settling on the plants. The Russian peasantry in those provinces where Hemp is grown, place their Cabbages within those fields, by which means they are free from caterpillars." There may be something in this, perhaps, but what may be called the maternal instinct is strong in all species, and will overcome various obstacles. It is, no doubt, true that butterflies are affected by odours.

All the white butterflies we see are not, however, injurious to our gardens. That pretty species, the Green-veined White (P. Napi), so similar to the more common P. Rapæ, is stated by Newman, whose authority in such a matter is unquestionable, not to attack cultivated plants, with the sole exception of the Watercress, which is a food very congenial to the palate of the caterpillar. The Black-veined White (P. Cralægi), which, abroad, is stated to do much damage to fruit trees, is too scarce and local a species in England to be deemed at all dangerous, and of late years it has disappeared from various places where it used to occur. Entomologists of the olden time reported it as occurring abundantly in Little Chelsea (or Brompton), feeding there while a caterpillar on the Hawthorn hedges, and, no doubt, proceeding from these to the trees in the orchards there enclosed, and which still remain, though the insect has disappeared. So also in the warmer temperatures of some parts of the Continent of Europe, the fine species known as the Elm Butterfly, or Large Tortoiseshell (Vanessa polychloros), is sufficiently abundant to be enumerated amongst the enemies of the fruit trees. In France the caterpillars are most frequently found on the wild and cultivated Cherry, clearing of their leaves whole rows of the latter in some summers. One cause of its plentifulness is the number of eggs laid by the mother butterfly, averaging four hundred or more. In Britain, the caterpillars are usually seen on the Elm or the Willow, and it would appear as if our climate were less favourable to their growth, for it is reckoned one of our scarce insects, and though the caterpillars are gregarious, the butterflies are frequently seen singly. Herein it differs remarkably from its pretty and common relative, the Nettle feeder (V. Urticæ), so often seen disporting in parties on banks of wild flowers.—J. R. S. C.

GROUND LEVELLING AND PRACTICAL GARDEN PLOTTING.—No. 17.

DRAWING PLANS.

To draw and transfer to the ground *fig.* 40. Draw the inside circle, divide it into five equal parts, as described in *fig.* 12 (see vol. xix., page 364). With point *f* as centre draw circles *k* and *i*, as shown by the thick and dotted lines; draw corresponding circles from points *a*, *b*, *c*, and *e*. Again from point *f* draw arcs *h* and *g*, also draw corresponding arcs from points *a*, *b*, *c*, and *e*. Where the lines cut each other are the corners of the beds. From centre *r* draw circle *s*.

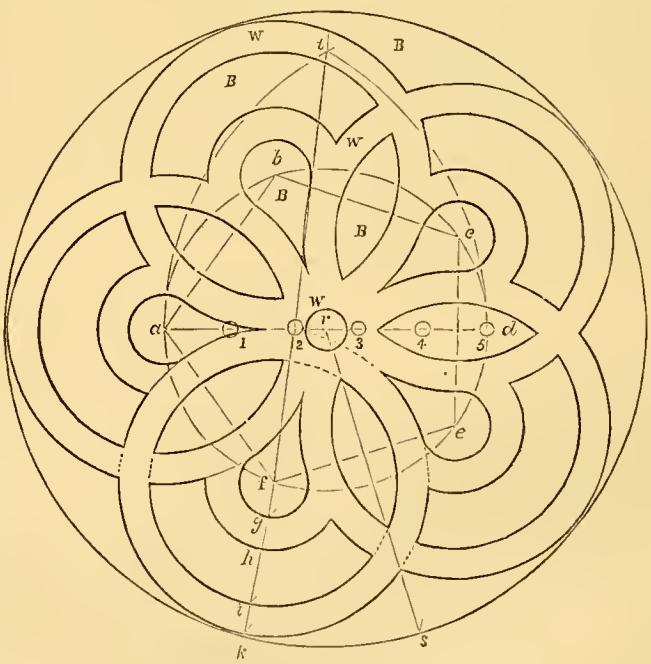


Fig. 40. Scale 24 feet to the inch.

To transfer *fig.* 40 to the ground. Find the centre of the piece of ground upon which it is intended to trace the design, and insert a peg, as at point *r*. Lay the diameter line *a d*, making *r* the centre. The diameter line *a d* is 40 feet long. From the peg at centre *r*, with a line 20 feet long, trace circle *a b c d e f*; divide the circle into five equal parts, to get the centres from which the design is traced. The best and surest way to do so is to form a pentagon inside the circle in the same manner as described in *fig.* 12. It is done thus on the ground:—From the peg at point *a*, with a string equal in length to the diameter—that is, 40 feet long, trace an arc from the peg at point *d* to point *t*; then from the peg at point *d*, with the same radius, trace an arc from peg *a* to *t*. Where the two arcs cut each other at point *t* insert a peg, then divide the diameter line into five equal parts, as 1, 2, 3, 4, 5; as the line is 40 feet in length, each division will be 8 feet—that is, from the peg at point *a* measure 8 feet, and insert a peg as at point 1; from the peg at point 1 measure 8 feet, and insert a peg as at point 2, &c. From the peg at point *t*—that is, where the two arcs traced from pegs *a* and *d* cut each other—lay a line passing through the second point or division and cutting the circle at point *f*; then lay a line from peg *f* to peg *a*, which will be one side of the polygon. Apply the line five times to the circle, and insert a peg at each point, as at points *a*, *b*, *c*, *e*, and *f*. From the peg at centre *r*, with a string 39 feet long, trace circle *s*; from the peg at point *f*, with a string 19 feet 3 inches long, trace circle *k*, as shown by the thick and dotted line; reduce the string 4 feet and trace circle *i*, also shown by the thick and dotted line. From the pegs at points *a*, *b*, *c*, and *e*, with the same lengths of string, trace corresponding circles to *k* and *i*. From the peg at point *f*, with a string 8 feet long, trace arc *h*; reduce the string 4 feet and trace arc *g*; trace corresponding arcs from the pegs at points *a*, *b*, *c*, *e*. From centre peg *r*, with a string 2 feet 6 inches long, trace the circle in the centre. Where the lines cut each other are the corners of the beds, marked B; w being walks.—M. O'Donnell, *Gardener to E. Leeming, Esq., Spring Grove, Richmond.*

NOTES AND GLEANINGS.

In the Royal Horticultural Society's Garden at Chiswick, which Mr. Barron is laying out in an admirable manner for its purpose as an experimental garden, he has formed near the Council Room a series of oblong beds on grass for the trial of bedding plants. They are of sufficient size to allow of a fair estimate being formed of the comparative merits of the plants when seen in a mass, and being now completed it is much to be desired that the present season should be taken ad-

vantage of by those who intend sending plants for trial, and who should forward them to Mr. Barron, Royal Horticultural Society, Chiswick, London, W.

—— Mr. Moore, Curator of the Botanic Garden, Chelsea, intends giving a course of six lectures on Botany, the first of which was to take place May 31st, and which are to be continued on succeeding Saturdays and Wednesdays.

—— The Scottish Arboricultural Society has just issued its volume of Transactions for the past year, edited by Mr. James Sadler. The objects of the Society are the promotion of the science of Arboriculture in all its branches by periodical meetings of the members for the reading of papers, by offering prizes and reports on the practical operations of forestry, and publication of the same, and by such other means as may be found advisable; and it numbers among its members most of the botanists, arboriculturists, and practical foresters of Scotland. In the present volume are a number of practical essays on various points of tree cultivation, and for the current year no fewer than nineteen prizes are offered, the competition for some being limited to working foresters and woodmen.—(*Nature.*)

WORK FOR THE WEEK.

KITCHEN GARDEN.

Now is a good time to carry out a vigorous crusade against weeds; the hoe ought never to be at rest in a well-cultivated kitchen garden till they are all destroyed. The ground is so dry that seeds cannot vegetate. When a succession of Horn *Carrots*, *Lettuces*, and *Radishes* is required, it is a good plan to water the ground and cover it with old mats until the seedlings are fairly above the surface. Prepare trenches for *Celery* and *Cardoons*, to be ready for planting as soon as rain comes. Embrace the first opportunity afforded by the ground being moist for thinning *Carrots*, *Beet*, *Onions*, and *Parsnips*, and as it is presumed that these have mostly been sown in drills, let the hoe be run through between the drills, not merely shaving the surface of the soil, but moving it an inch or two in depth. This, while it roots out the weeds, at the same time checks rapid evaporation and pulverises the ground. Stake *Scarlet Runners* after drawing a little earth to them with the hoe. Where it is intended to keep them dwarf and not to stake them, let the leaders be pinched off. By constant attention to stopping the leaders as they advance above three or four joints in length, Scarlet Runners will be induced to bear well. The latter mode of culture should only be resorted to when stakes cannot easily be procured. Give recently-planted *Celery* copious waterings once or twice weekly. The method frequently pursued of giving plants in the open ground a small drop of water every evening or morning cannot be too much deprecated, such sprinklings cake the ground and lower the temperature of the soil without any corresponding benefit to the plants. Make a small sowing of *Red Beet;* when sown early in rich soil it becomes too large and coarse, and does not retain its colour in boiling, nor look so well in salad as smaller roots of the same variety.

FRUIT GARDEN.

The Strawberry beds will now require attention as to watering, &c. After thoroughly cleaning the beds a good soaking should be given at the first possible opportunity, and if a moderate watering from the stable tank can be applied when the ground has been well saturated with clean water, it will greatly assist in securing large fruit. The beds should be mulched as soon after watering as convenient, in order to prevent evaporation, and the fruit from being spoiled. Next to slates or tiles, clean straw is the best material for this purpose. Continue active operations against aphides and other pests to fruit trees. The shoots of Cherry trees infested with the black fly should be dipped in tobacco water immediately the insects are detected, to prevent the shoot from curling, which would stop its growth. Either pick-off the caterpillars with the hand, or apply a wash of lime or clear soot water to Gooseberries and Currants infested with Gooseberry caterpillar, which increases so rapidly that a constant watch must be kept-up for some time. Pinch-back all Currant shoots not wanted for wood. The fruit of Gooseberries, &c., like those of more value, will be considerably improved by summer-stopping the young wood —a fact well-known to those who have paid attention to this mode of pruning, which is much better understood on the Continent than in England.

FLOWER GARDEN.

The newly-planted subjects will require constant watching, as under the best management failures will sometimes occur. Blanks should instantly be made good, and the tying and staking of everything requiring support must on no account be delayed. Where an immediate display of flowers is not wanted the buds may be picked off for a week or two to encourage the plants to cover the ground. A full sowing should now be made of Brompton Stocks and all perennials for flower-garden purposes. Make a successional sowing of some of the most choice hardy annuals for autumn flowering. Pay particular attention to the stirring of the soil amongst the plants in beds and borders; this will be attended with the best results, and ought to be carried on till the plants begin to grow and cover the surface of the beds, when it ought to be discontinued. Be sure that plants growing in baskets, vases, &c., are properly attended to, and thoroughly watered at the close of very hot days. The Hollyhocks should now be staked and attended to as they advance in growth. The rosery should have all the attention that can be spared at this busy season; remove all shoots and suckers, and keep a sharp look-out after insects. The Rose has many enemies, from the appalling earwig to the seemingly harmless aphis; use all means at hand to destroy these, though nothing is equal to hand-picking for eradicating grubs and beetles. It is a tiresome and laborious method, yet it is the only one to which recourse can be had with permanent advantage.

GREENHOUSE AND CONSERVATORY.

Conservatory and stove climbers will require attention to keeping the current year's shoots within proper limits. If possible, avoid everything like formality in arranging the branches, and, provided at the winter regulation of the plants the main shoots were trained to occupy the desired positions, the young wood may to a considerable extent be allowed to follow its natural mode of growth, if this does not create confusion, which is as much to be guarded against as strict formality. Hardenbergias, Kennedyas, &c., may be slightly cut back after blooming to induce a new growth. Water should now be given liberally to plants in the open borders of the conservatory, excepting, perhaps, those recently planted. Use the engine whenever it can be done without interfering with the visits of the family or company; either early in the morning or late in the evening, will at this season be found the most suitable time, that the house may become dry before it is wanted for visitors. The display of bloom must be kept up, and as there is now a large number of plants to select from, considerable variety may be effected at each regulation of the inmates. Shade daily when requisite, and give air in proportion to the state of the external atmosphere. The stock of Balsams and other annuals grown for filling vacant places in the greenhouse, should be encouraged by frequent shifts; keep them in bottom heat and near the glass, pick off the early-formed bloom-buds, as the plants should attain a considerable size before being allowed to bloom. Continue to train Kalosanths neatly, and water them with liquid manure occasionally. Specimen Scarlet Geraniums should likewise have liberal encouragement. Show and Fancy Pelargoniums for late blooming will thrive better in a somewhat shady situation, where they can at the same time be protected from heavy rains. Fuchsias, if not in their blooming-pots, should be potted forthwith. Train them in the desired form, and pinch back weak and straggling shoots. Young stock in pits and frames will now be making rapid growth, and must be carefully attended to as to watering, stopping, training, &c. Examine Heaths frequently for mildew, and apply sulphur the moment it is observed. Some of the soft-leaved varieties are very liable to be attacked by that pest at this season.—W. Keane.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

We earthed-up and mulched Cauliflowers planted out and pricked out for succession. Did the same with the most forward Cabbages, after giving them a good soaking with sewage two days or so after forking the ground, which had become hard-baked on the surface. We sprinkled Celery pricked out in beds and growing freely. We would have planted out some beds finally, only we should have required much more water, and until fresh tanks are finished and full, we must be careful of what little we have. The expense of carting water last season an expense that to some farmers with a large stock of beasts almost amounted to a second rent, has made many aware of the importance of saving the water from buildings and from drainage, instead of letting it run off and putrify in stagnant ditches.

Succession crops, &c., much the same as last week. Pota-

toes, Peas, Parsnips, Carrots, and Onions, never looked better. We must get our forced Sea-kale cut up and planted again. Our Globe Artichokes we have partly replanted, as some large stools were killed by the frost, though protected with litter, but not put on thickly.

FRUIT GARDEN.

Strawberries.—Expecting rain, we had the ground between the rows hoed, and watered with sewage, hoping the rain would wash it more thoroughly down. This is the most profitable way of giving such watering. Shortly afterwards we mulched the ground with long littery dung, from which all, or mostly all, of the short was shaken out, that being too valuable for Mushrooms and other purposes not to be looked after, and now the rains afterwards have washed the mulching so as to leave it sweet and clean. We used to suffer as early as this with mice cutting off the flowers and nibbling through the flower-stems, but this season, having caught so many in figure-4 traps, we have seen no sign of them as yet.

We shall soon have all the Strawberries in pots out of the houses; the vineries are cleared, and the highest shelves in the Peach house will be cleared in a few days; we must then depend on those in a pit and in the orchard houses before they come in out of doors, as we do not think we shall need to raise any and plant under glass this season. There is sometimes an awkward few days between the potted plants and those which bear naturally out of doors. If we are in any doubt we shall place a few lights over a piece on a sloping bank. We have taken several lots from our most forward orchard house, and replaced them with those in pots from out of doors, and thus they came on gradually with little more help than shutting up the house at night. A good many of the forced plants have been planted out. We are surprised that a correspondent has failed, when he adopted this plan. For some thirty years we have found no plan so sure of yielding an immense crop the first season after planting. Is he sure that the fruit buds had not suffered from the frost of last winter? We are quite satisfied that ours have done so. A few open flowers have also suffered from frost, but these are comparatively few, and there are plenty fresh enough, and setting pretty freely. In taking runners, however, it would be advisable to avoid the barren plants. The kinds with us that are up to the usual state of free blooming are young plants of Keens' Seedling; young and older of Black Prince, and Empress Eugénie, a rather weak-growing kind as respects the plants, but blooming freely, and producing large fruit.

One principal reason for turning out Strawberry plants from elevated positions in houses, is the difficulty of getting up to water them, and then the risk in hot weather of red spider, which may not be easily confined to the Strawberry leaves. If we saw any red spider on a plant we would sooner throw it away than plant it out of doors. When we have any doubt we clear the plants of all flower-stalks, lay the pots on their sides, and syringe them well with clear soot and lime water before planting them.

From the early vinery we have removed all or nearly all the plants, so that the atmosphere may be dry as the fruit ripens. A little sulphur on the pipes or wall will then do no harm. For late Vines see what was stated the other week. When the berries are forming and young they will not stand hot sulphur fumes, and many things are blamed for rusted berries, when the true cause is simply hot sulphur fumes. Our fruit houses are only truly fruit houses as the fruit approaches maturity, and when the houses are being washed and clean; at all other times they are either greenhouses in winter or stove-plant houses in summer. Until the foliage becomes too dense, the shade of the Vines is rather grateful to many plants. We have never had better Gesnera zebrina than when grown under the shade of Vines, and where there was every security that the foliage should be dry before a sunbeam reached it. A moist leaf with a scorching ray on it just spoils all the beauty. Towards autumn the leaves are not so sensitive.

ORNAMENTAL DEPARTMENT.

Dividing, increasing, fresh potting, and fresh surfacing Mosses and Ferns, and getting them for relief under the shade of Vines, have occupied much of our time. Potted Euphorbia jacquiniæflora so that they may become good-sized plants. We cut down Poinsettia pulcherrima, and made cuttings of the length of two buds, and when dried inserted them as cuttings. As soon as the older plants have broken an inch or so, we shall remove most of the old soil, repot, and give at first a little bottom heat. These we shall depend on for something like parasol floral leaves; the cuttings will supply nice little plants with smaller heads. In looking at Caladiums lately repotted into rather strong, lumpy, fibrous, fresh loam well enriched, we were much struck with the large roots threading this rather strong loam. Peat earth, or rather heath soil, is becoming almost a luxury with us, and we are convinced that many plants would do just as well without it as with it, and grow all the more robustly in consequence. We are going back to our old love for charcoal, and char most of our rubbish instead of burning it. Almost the only thing that comparatively beats us is sawdust; we have little hope of succeeding with it unless we had some sort of oven on purpose. We have frequently blacked it without charring it. A little charcoal however small, not larger than quills, or even crow feathers, when free from dust, lightens the soil for small pots. Potted flowering and fine-leaved Begonias, Eranthemums, and winter-blooming plants. Greenhouse plants, and changing them from place to place, we alluded to lately.

Our chief work at the end of the week was planting out some thousands of *bedding plants*. Almost everything has been exposed for eight days, except Coleus and such other tender plants. We have planted out a few, just to show what we intend having, but the bulk we will keep where we can place glass over them for a fortnight or three weeks. On May 29th we hope to turn some hundreds of plants into 6-inch pots, and give them a fortnight of free growth, and then some days' exposure before they are turned out. "Once bit, twice shy." Once our plants suffered from frost, now we prefer to have largish plants and to turn out later, so as nearly to fill the allotted space at once. We have had nothing so striking for several years in the way of colour as the Coleus Verschaffeltii. We have tried many others, but we have found none to be depended on in our exposed place, either for standing or for colour. We intend using more of the above brown crimson this season. Some we will have in rows, with yellow Calceolarias on one side, and white Madame Vaucher Geranium on the other side; some in beds edged with young plants of Centaurea candidissima; and others in beds edged with Polemonium cæruleum variegatum. We have put out a lot of strong bushy plants of Iresine Herbstii. They had been struck as thickly as grass, and then turned out into the pit from which the Calceolarias had been removed to earth pits, the Iresine lifting well with balls. Iresine Lindenii has been treated in the same way, and will be planted out presently. Partly from want of water we plant all we can in preparatory beds instead of potting them. Watering and labour are thus greatly minimised. Of course the plan would not suit plant-dealers. It is only practicable where you can raise and carry to plant. Our Calceolarias are never in a pot. The plants are lifted with excellent balls, the fresh roots peeping all round.

One thing has interfered with our proposed arrangements. We had four large spaces which we generally made each into four clumps or groups, surrounded with an edging of the Cineraria maritima. We protected the Cineraria in winter with a ridge of dry ashes, and six weeks ago we thought all was safe. We find now, however, that a great many plants are dead, and that the others will want some nursing, so as to be depended on. We shall have to alter the planting. Had we noticed sooner we might have had lots of seedlings, but they are not good for much the first season, being too green to be thoroughly effective. We notice that the Centaurea stands the winter in the far north. A good many stood here last year. This season, even with a little protection, not a single plant has survived.

A word to our amateur readers with small gardens. When hardening-off your plants keep them together in groups; they will be more easily watered, and if a cold night come they can be easily protected; in fact, each plant will help to protect its neighbour. Many anxious people injure hundreds of plants by setting them in their pots on the beds where they intend planting them, and leaving them there for a number of days. In cold nights and bright days the roots suffer very much, even when the top does not show it. Whenever you take them to the bed get them at once into the soil. As hinted above, however, do not be in too great a hurry, even in doing that. Plants standing together will be safer than when scattered, and a warmer soil, which has been well exposed to the action of the air, will soon make up for a week or ten days' later planting.—R. F.

TRADE CATALOGUES RECEIVED.

W. Milligan, 1, Churchplace, and Westpark, Dumfries.—*Catalogue of Florists' Flowers, Bedding-out Plants, &c.*

B. S. Williams, Victoria and Paradise Nursery, Upper Holloway, London.—*Catalogue of New and Rare Plants.*

TO CORRESPONDENTS.

*** We request that no one will write privately to any of the correspondents of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By doing so they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely to The Editors of the Journal of Horticulture, &c.*, 171, *Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

Books (*A Young Gardener*).—Smith's "Introduction to Botany," edited by Macgillivray; Johnson's "Science and Practice of Gardening;" "Indoor Gardening," and "Out-door Gardening." The three last-named can be had from our office. (*I. N.*).—Lindley's "Introduction to Botany."

Ditch Plant (*Rab*).—Probably one of the Ulvaceæ, all common.

Pinching Espalier Pear Trees (*Old Subscriber*).—If your espalier Pear trees are furnished with leaf buds near the bole, close summer-pinching will induce fruitfulness. Root-pruning in autumn is recommended for a too-luxuriant growth. If the trees are bare of leaf as well as blossom buds, they must be headed back; and to cause them to break regularly, pinch the point out of the leading shoots twice during the summer, pinching all back growths in closely.

Pear Leaves Blackened (*T. Liaz*).—Yes, the cold winds and white frosts caused the wrinkles and blackness. (*A Subscriber, Co. Down*).—Night frosts and easterly winds have caused the blackness. There is no remedy.

Cutting Down Young Pear Trees (*Greenhorn*).—Your Pear trees budded on the Quince should be cut down when the leaves fall in autumn. You should not cut close to the bud; cut over the young shoot at 18 inches above where the bud was inserted. You can obtain all the information you require on Strawberry culture from the pages of this Journal.

Spout of the Scarlet Hawthorn (*A. R.*).—A spray of white flowers on this is not common, but not unique. Such returns to the normal colour occur in almost all variations.

Growing Mushrooms in a Wood Case in a Cellar (*E. R. P.*).—The best plan is to procure some horse droppings fresh from the stable, and spread them thinly on a dry floor until a sufficient quantity be secured to form a bed 1 foot deep. When you have that quantity mix with them an equal quantity of turf taken from a pasture where the soil is a rich light loam, chop up the whole rather small, and form it into a bed about 14 inches deep, putting-in about 3-inch layers at a time and beating firm. Proceed thus until you have the required thickness. Let the materials remain until they heat, and when the heat is not more than the hand can bear comfortably, or when a thermometer with its bulb inserted about 2 inches indicates 90°, insert the spawn, making sure that the bed will not become hotter after the spawn is inserted. It is well not to be in too great a hurry about spawning, but to wait a day or two to see if the bed increases in temperature; if it do so you must wait until it decline to 90°. Put in the pieces of spawn the size of an egg, in holes 9 inches apart, and an inch deep, closing-up the holes and beating firm. In about a week cover with 2 inches of soil. The turfy loam will answer very well if chopped-up fine, but for this purpose it is best when six months old. Make the covering very firm, allow it to remain for six weeks, then you may apply water at 75° until the soil is just moistened, and in about a week Mushrooms will appear. All you have to do is to keep the soil just moist. A bed will bear a considerable time. We have one which has been in bearing since the beginning of February, and now produces an abundance of fleshy Mushrooms.

Filberts Unproductive (*Idem*).—The cause of the trees not bearing is probably the proximity to the sea, though we have seen Filberts doing very well at a short distance. We would thin-out the branches so as to admit sun and air, and remove all suckers from the base.

Walks (*Idem*).—We do not know of any mode of making garden walks that will keep the weeds down, except asphalting or using cement, and of the two the former is the cheaper and better.

Utilising Building Ground (*Idem*).—The land would be best sown with Rye Grass. We should work it so to have it in good order by September, and on the first prospect of rain in that month we would sow of Italian Rye Grass, 1½ bushel; Pacey's Perennial Rye Grass, 2 bushels; and White Clover, 4 lbs. There will be a cutting in spring, and two or three during the summer, and will be good for two or three years.

Pansies (*S. H.*).—We cannot undertake to name the varieties of florists' flowers.

Pansy Propagation by Seed and Cuttings (*H. V.*).—Drain a pan well, place over the drainage about an inch of the roughest of the compost, which may consist of turfy loam, light rather than heavy, two parts, and one part leaf soil made very fine and sifted, adding one-fourth of sand. With this fill the pan within half an inch of the rim, level, scatter the seed evenly, and cover with about one-eighth of an inch thick of soil. Place the pan in a house with a gentle heat, or in a mild hotbed, keeping the soil just moist, and shade so as to avoid very frequent watering, and to keep uniform moisture in the soil. When the seedlings appear, place the pan near the glass and admit light and air abundantly. Remove the seedlings to a cold frame in about a week after they are up, and when they show the second rough leaf prick off in pans or boxes prepared as for sowing, placing them about an inch apart, return them to the cold frame for a few days, then harden them well off, and finally plant them out where they are to flower. They may also be planted about 6 inches apart in beds, from which they can be removed with balls in autumn or early in spring to their final quarters. For cuttings select shoots which proceed from the base of the plant, and are from 1½ to 2½ inches in length, slipping them off close to their origin. Pare the base smooth with a sharp knife, remove the leaves half way up the cuttings, and insert these to that depth either in pans prepared as above or in a like compost in the open ground, where they can be covered with a hand-glass. If inserted in pans place these in a cold frame, and shade them from sun, keeping them moist and close until they are rooted, as they will be in about a fortnight, then admit air and gradually harden them off. It is not absolutely necessary that the cuttings should have a heel, but those taken from the base of the plant make the healthiest stock.

Bulbs from the Cape (*Ignoramus*).—We should pot them at once, and place them in a frame over a sweet hotbed about 18 inches high, giving a bottom heat of 70° to 75°, plunging the pots to the rim, but not using the lights except when the weather is very wet; then put on the lights to exclude the rain, but tilting them back and front so as to admit air freely. By this process you will probably secure the production of a quantity of roots before the tops are far advanced. As they begin to grow, remove the pots to a light airy part of the greenhouse. Afford good drainage, and a compost of two parts yellow or hazel loam, one part brown sandy peat, and one part of old cow dung, with a free admixture of sharp sand. Use in the first place pots twice the diameter of the bulbs; such will be sufficiently large for most kinds.

Rhipidopteris peltata (*S. A. M.*).—We are unable to account for the plant not having put up a fertile frond, but we think it is owing to its age. Being now a good plant it will probably produce fertile fronds by autumn.

Lilies of the Valley not Flowering (*F. S.*).—We think the failure is due to the warm border. They like slight shade and moisture. Take them up in November, and plant them in clumps about a foot apart in rich light soil on a north border, but not close to a high wall; or an east aspect will do. Mulch with about an inch of partially decayed leaves, and after April water plentifully in dry weather. You would see what was said about Violets in recent numbers of this Journal. The best time to plant White Narcissus is as soon as the stalks and leaves turn yellow, taking up, and, after dividing, replanting the same day; or they may be planted up to October, but the sooner after the leaves turn yellow the better. Under any circumstances replanting should be done before they begin to grow.

Local Flower Shows (*T. G.*).—We cannot find space for reports of them. There are hundreds, and of no interest except to dwellers in the immediate vicinity of each. Poultry shows are quite different; almost every exhibitor is a seller, and, compared with flower shows, they are few.

Watering Dwarf Roses (*F. J.*).—The young dwarf Roses mulched with short litter should be watered about once a-week, one gallon and a half being a good supply for them, but much will depend on their growth. Weak-growing plants will not require the same quantity as those which are vigorous, and some allowance must be made for those not in health. Roses delight in water overhead, and we would always give it if the soil is in a healthful, moist condition. In dry weather, however, water at the roots will be required, as well as sprinkling every evening in hot weather, watering once a-week as you name, and twice a-week in very dry, hot weather. Watering requires judgment. There is no book on the subject, but most books on gardening give sufficient instructions.

Lawn Mower (*Idem*).—Any of the lawn mowers advertised in our columns would suit you, and you can cut with them so as to leave the grass as a mulch by removing the grass-box. We cannot depart from our rule not to recommend dealers.

Asparagus Cutting (*A Farmer*).—The *less* you cut from it the stronger it will come the next year. Do not cut down the stems now 2 or 3 feet high. Give abundance of liquid manure, and encourage the growth of the stems—they are providing for next year's production.

Cucumbers Shrivelling (*J. S., Homerton*).—Remove the surface soil down to the roots, place in its stead some light rich compost—two-thirds earth and one-third decayed stable manure. Water with tepid, weak, liquid manure.

Potatoes for Next Spring (——).—You may plant Potatoes in the middle of July, or a little earlier, and if these are kept protected in the ground, or taken-up before frosted, and kept in dry soil in a dark place, they will, about and after Christmas, pass for new Potatoes. Ash-leaved Kidneys and early kinds are generally best. The tubers must be kept dry and retarded before planting.

Greenhouse and Stove (*Greenhouse*).—We have little doubt that the Vines doing so well, planted in the raised border in the middle of the house, is greatly owing to the heat of the pipes placed in the middle of the house. The roots and even the stems of the Vines would be comparatively cold. Two or more pipes placed within a foot of the stems of the front Vines would much help them. When pipes are placed in the middle of a wide house, with the floor of such unequal level, it is a good thing to have drains under the bed of earth, so that there may be a free interchange of cold and heated air.

Flower Garden (*C. W.*).—The flower-garden planting is good on the whole; but as you give the keynote by edging No. 1, Flower of the Day with Iresine Lindenii, so we would continue the same plan, and edge 2, 3, 4, 5 with Cineraria maritima, Centaurea, or a white-leaved Geranium. The 6, 8, 7, 9 we would edge with good plants of Pyrethrum, as you propose for 7; 9, 12, 13, 10, 15 we would mix and edge with Lobelia; 11 and 14 we would edge with Purple King Verbena, and if the pigeons will not let that grow, try Iresine Herbstii.

Span-roofed Vinery (*A New Subscriber*).—There is nothing better than is to be found, as you say, in Loudon and McIntosh. The cheapest mode is to have a fixed roof, a double ridge-board, with an open space for ventilation between, and a cowl over the space to let air in and keep wet out. A more elegant plan is to have a lantern all the way, raised above such ridge-boards. A simpler mode would be to have so many moveable top lights. You will obtain no better information easily than in the "Vine Manual." If the house is to be 40 feet in length, a good width would be 20 feet, but it might be more if deemed desirable. For an ordinary house the front sashes might be from 4 to 6 feet in height, including the front wall, but for early or late work a house with a front wall a foot above the ground, and the ridge-board 11 or more feet in height, would come in very useful. There would be free walking room in the middle of the house.

The most profitable angle for the roof, all things considered, is about 45°, but a very flat roof will do for general purposes, when you have upright glass in front, as that admits the sun's rays freely in winter, late autumn, and early spring. The most economical mode of ventilating a fixed roof has been referred to above. Leave a space 1 foot wide between the ridge-boards, and supply the space with boards, pivot-hung, that will open at once when the support is withdrawn The arrangement and amount of piping will depend entirely on what is wanted from it, and the size of the house. Supposing the house to be 40 feet by 20, about 200 feet of piping would be necessary in order to ripen Grapes at the end of June, half as much more to ripen them earlier, and double that quantity to have them very early. The most profitable plan for the pipes would be to place them level on each side within 2 feet or so of the respective sides, as might be convenient. Pipes placed on the level will do more work than those raised above each other in stacks.

Vines not Fruiting (*A. G.*).—As the wood and foliage of your Vines are looking well, there is a good prospect of your obtaining a crop of Grapes next year. For a conservatory, with plants underneath, the Vine rods should not be less than 4 feet apart—6 feet would be better—the side shoots 18 inches apart. The foliage will then have ample space to expand to its natural size, and the wood will ripen well, without which you will not obtain good Grapes. Pinch the point out of the shoot two leaves above the bunch, where there is no bunch pinch at seven leaves. Cold draughts are very injurious to Vines at any time, especially so at the time of flowering and after the Grapes are set. Water escaping from the gutter in winter and saturating the border would be highly injurious to the roots. The most probable cause of unfruitfulness is the roots being out of order; you should examine the border, and if the roots are unhealthy remove as much as possible of the old material, and replace it with fresh turfy loam.

Vine Shoots and Grape Bunches Destroyed (*A Subscriber*).—We can detect no insects' eggs on the specimens enclosed, and we think the mischief is what gardeners call "shanking." It is an ulceration caused, we believe, by the roots not supplying sap sufficient to maintain the growth of the Vine. More warmth to the roots and a regular supply to them of weak tepid manure water might remove the mischief.

Converting a Frame Pit into a House (*An Old Subscriber*).—We would seriously advise you, as a yearly tenant, to have nothing to do with brick walls or other fixtures on the ground to which you would like to move, without a written signed agreement with the landlord. Not being in the nursery trade, you would have no right to move a brick afterwards. In many cases you could not move the woodwork. A friend of ours put up a nice greenhouse vinery against the end of his dwelling-house, and though as a yearly tenant he is not likely to be disturbed, he has taken legal advice, and finds that when he leaves he must leave the house behind him. This, we think, is extreme, but it just shows that a tenant, to make himself safe, should have the consent of his landlord in writing to move or sell, on his changing his residence. We are not sure if we thoroughly comprehend your pit further than this, that it is formed out of a cistern 27 inches below the ground level, through which a flue runs, that the back of the pit is 80 inches above the ground, and 19 inches above it in front, width in the clear 5 feet 7 inches, from outside to outside 6½ feet, length four sashes of 39 inches each, by 6 feet 7 inches. In this place there is a difficulty in keeping the finer Geraniums in winter, though Zonals do well. The sides of the pit are formed of double lines of spruce boards 4 inches apart, the space between filled with coal ashes to keep out frost, and we presume some sort of wall-plate to keep the ashes dry. Ashes, if dry, are not bad for the purpose, but sawdust is better, and such double boards well packed with sawdust in the interval would keep out more frost than a 14-inch wall. We have no objection to your widening the place so as to make a little house of it, quite the reverse, and if the flue goes along the pit or cistern now we would let it remain, and bring it back in the pathway behind. A good stout tile would make the top of the flue and part of the pathway too. Neither have we any objection to your having hanging upright lights in front, but all these will add greatly to the expense. You might also raise your present back wall, say to 6½ or 7 feet, high enough to walk under, and remove the present board wall in front, so as to give the necessary width wanted, adding fresh glass to the length of rafter. But keeping your position and economy in view, this is what we would advise, merely premising that instead of a hipped roof, you might have a regular span if you liked by increasing the width. As you have a pit, we would leave it alone. The flue going beneath we would set boards across for plants, and we would have a hotbed when we liked. Then on blocks of wood, or a layer of bricks, we would lay down sills for the new house, 5 inches square, and mortice into them upright studs 3½ inches square; those in front to be 3½ feet in height, those at back 5½ feet in height, width from 9 feet across. Have a ridge-board supported at each end, and one stud in the centre. Have the ridge-board so as to receive your sashes in front on rafters, these sashes to be moveable at back. Finally have a hipped roof of fixed glass, leaving beneath the ridge-board from 6 to 7 feet. Three-quarter-inch boards screwed to these studs on each side, and sawdust between, would make excellent walls. Even single-inch boards, well seasoned and tongued, would do. Painted with anticorrosion inside and outside, they would stand a long time; and when you wanted to remove them, you could take all down in a short time and pack in small compass. For a hipped roof in such a little place we would have sashbars, say 15 inches apart, 1¼ inch by 2 inches, and grooves for the glass, not to be puttied but packed from beneath; and if there was not a flue we would not have one, but have a small iron stove with a flat top, and thus be altogether independent of bricks and mortar

Clianthus Dampieri Culture (*Lantana*).—As you have frequently failed we give the essentials of culture. The seeds should be sown singly in small pots, and be just covered with fine soil. Place the pots in a warm greenhouse or intermediate house, on a shelf in a light, airy position, just keeping the soil moist. The seeds should be sown in May. If sown earlier they may be placed in a Cucumber or other frame, and for some weeks be plunged in a bottom heat not exceeding 75°, whence they should be removed to a warm genial greenhouse or intermediate house. Shift the young plants into pots two sizes larger as soon as the roots show round the sides of the ball, and this shifting into larger pots should be persisted in until the plants are in their blooming pots. In winter a temperature of from 45° to 50° is most suitable, and in summer a cool, well-ventilated greenhouse and a light position are necessary. Water only sufficiently to keep the soil moist, but allow it to become dry before watering. Employ a compost of two parts turfy hazel or yellow loam, one part fibrous but sandy peat, and half a part each of silver sand, charcoal in pieces from the size of a pea to that of a hazel nut, and leaf soil, the whole well mixed and incorporated, providing efficient drainage. The seed pots should be kept near the light, so that the plants may have a short stem from the soil to the first pair of leaves, and in no case should this at any after-potting be placed deeper in the soil than it was at first. The main cause of the plants' going off is covering the stems too deeply with soil. It is essential that the base of the true stem should be exposed in all its stages above the surface of the soil. Inattention to this simple point often ends in the plants dying off suddenly at the neck.

Climber for North Wall of Greenhouse (*A. A.*).—For the north wall we do not know of anything that would serve you as a covering except Ficus repens. Could you not have rockwork against it, and plant with Ferns?

Unconquerable Flies (*Tom Gardner*).—As burning sulphur and tobacco does not kill them, we cannot suggest a remedy.

Scale on Orchard-house Trees (*A. A.*).—The Peach sprays you enclosed are severely attacked by the turtle scale, Coccus testudo. Have every branch and stem brushed over sedulously with a hard brush, and then with a painter's brush as thoroughly painted over with this mixture:—Soft soap, 2 lbs.; flowers of sulphur, 2 lbs.; tobacco, 1 lb.; and a wineglass of spirit of turpentine. Mix the sulphur, turpentine, and soap into a paste with warm water; boil the tobacco for an hour in a covered saucepan in some more water, strain it, mix it with the soapy mixture, and then add enough water to make five gallons.

Wireworms (*A Subscriber*).—A dressing of gas lime will cause them to move if it do not destroy them, and yet it is not a safe dressing, as the land must remain some time before it will be fit for cropping. Soot applied in quantity sufficient to blacken the surface has been found very useful, also lime at the rate of 100 bushels per acre. There is nothing to equal Carrots and Potatoes as a bait. A few inserted about 2 inches in the soil, and examined, will result in a great many of the wireworms being destroyed. You think four a great many to be found at a Bean. We have this spring taken fourteen from the root of a Lettuce. They are doing serious injury, and in ground like yours recently added to the kitchen garden.

Destroying Earwigs (*J. R. W.*).—The best plan is to trap them. The traps may be obtained of most nurserymen and seedsmen. Try to poison them. Lay for a few nights saucers containing a little honey near their haunts, and if the earwigs take that then mix an equal proportion of arsenic with the honey.

Caterpillars on Pear Trees (*T. Collison*).—Your Pear trees are probably infested by the caterpillars of Bombyx Neustria, or Lackey Moth, which cluster in large numbers beneath a web-like tent. They are most easily got rid of in an early stage of their growth; hand-pick and destroy them. All caterpillars infesting fruit trees should be picked off by hand.

Insects on Pear and Black Currant Trees (*G. B. C.*).—The flies sent (at the present time so abundant on these trees) are the Bibio hortulana, which are bred in decaying mould, and are not injurious to the trees, to which they have resorted to suck up the honied secretion emitted by the myriads of aphides with which they are, unfortunately, at present so much infested.—I. O. W.

Caterpillar Attacking Roses (*A. D. M.*).—The caterpillar sent is that of the Geometra elingnaria, one of the looper species. It is not a usual Rose-eater, but is not very choice in its food.—I. O. W.

Names of Plants (*G. B. Clarke*).—Claytonia perfoliata, native of the N.W. coast of North America. It was introduced into England as long since as 1793. (*H. C. G.*).—We cannot name plants from leaves only.

POULTRY, BEE, AND PIGEON CHRONICLE.

WHAT POULTRY SHOULD I KEEP?—No. 1.

BANTAMS.

In discoursing in a number of papers upon what poultry it is best for a person to keep, I begin with Bantams—the smallest first, but certainly not in self-esteem, so that if the little birds could be consulted, they would think me right, for they would say, "Bantams first of course." But I have another reason: this is late in May, and the right time to be getting sittings of Bantams' eggs, for if hatched earlier than June they would in a few generations cease to be Bantams, and become small fowls, exceeding diminutiveness being their most essential point. But yet, again, the smallest first is the right rule, for in a procession the most important personages walk last. So bearing this in mind, exhibitors of elongated Ducks, pursy Geese, and bloated Turkeys, may be consoled, as their pets are, by committees, judges, and reporters, always placed last of all.

As to Bantams, they are scarcely kept so generally as they ought to be, and they could be kept likewise with profit; for wherever there is a small yard or garden, and wherever there is a family, however few in number, there will the little bits and scraps that must always be on plates and dishes, there according to size of premises and family Bantams may be kept, and with profit, too. As says Mr. Wright, in "The Practical Poultry-Keeper," "We believe them to produce quite as much for their food as ordinary breeds, but their chief use is in the garden, where they eat many slugs and insects with very little damage. On this account they may be usefully and profitably kept where a separate poultry yard is found impracticable." I would add, as a Bantam fancier for life, that no

breed affords greater amusement and interest, and for a few of these birds the expense is *nil*, while many eggs are the return.

Bantams have been great favourites in England from our forefathers' time to ours, and favourites they always will be. The most ignorant person, poultry-ignorant I mean, who just does the poultry tent at the Bath and West of England, or such like shows, yet pauses always to notice the pretty little coxcombical, bumptious Bantams. My own plan since I have lived in my present home, where are no divisions save of evergreens between flower garden, kitchen garden, and yard, is to give them liberty from September to March all day long. In March, when the seeds are just sown, it is better to keep them in a little wire enclosure; just a little house of any kind, and a wired space of a few feet or yards square will do. If into this you throw some of the mowings of the lawn, and an odd bit of green food now and then, and supply them with a morning's meal of corn, and dinner-plate scrapings in the middle of the day, the little creatures will do wonderfully well, having, of course, clean water and a dust bath. If quite at liberty mine seem to despise corn, but then their range is very large in shrubberies and park, and the supply from the kitchen is also considerable. During the spring I let them out at four or five o'clock in the afternoon, when they attack the manure heap, and then walk the lawn, and are off to bed before they can do mischief to the seeds. In rainy weather I let them out all day, for when the ground is wet they can do no possible damage, even in the flower garden, while they can and do surprise many a caterpillar, and grub, and worm. As the summer advances I give them more and more liberty. A little Bantam hen or two about with chickens is always doing good in clearing the ground of insects, and in late summer and the rest of the year, and on to the next March, I am sure Bantams only do good. This has been my plan for years, and I inherited a garden overrun with slugs, but they have disappeared long ago.

Thus, having shown that the little things only do good if rightly managed, and afford infinite amusement, I would say further that exhibitors of large fowls may with advantage make Bantams their second horse; there will be no crossing of breeds, and the carriage is trifling.

To come now to varieties. The feather-legged speckled Bantams of the last century are, I fear, nearly extinct. I saw some in a back street at Portsmouth in 1853, near a bird shop, and one pen, I think, I remember at the Birmingham Show in 1865. These I apprehend were the Bantams which Horace Walpole kept, as Peter Cunningham in his interesting sketch of his life, placed at the beginning of the complete edition of his letters, tells us that the lord of Strawberry Hill might be seen in the morning walking about feeding his Bantams. These birds I well remember a few old gentlemen, somewhere about 1830 and a few years later, used to take great delight in. About that time, as far as I can recollect, Bantams were talked of as either feather-legged or smooth-legged, the latter being the Nankin Bantams. Exhibitions there were then none, but I knew many ardent Bantam-fanciers; almost all were tradesmen in a country town, who had small backyards adjoining, perhaps a stable. The Nankins were in those days much the prettiest, save, of course, the Sebrights, which were scarce; the contrast of feather was pretty—Nankin body and the dark hackle and tail. These yellow Bantams are now seldom seen, and yet they have had their share in aiding in producing two beautiful varieties, first the Sebright, and secondly the more modern Game Bantam. The old feather-legged and the Nankin did well in a very moderate range, especially the former, who were less active. There were also Partridge Bantams with yellow legs, and I think the cock hen-tailed. I have seen in inferior breeds of Game Bantams clear traces of the Partridge cross in the breast and wings. I have no recollection whatever of an old class of Black Bantams, but there were White ones, both feather-legged and clear-legged, but large and inferior in colour to our modern birds.

Next—and what a next!—the elegant-plumaged bird manufactured by the late Sir John Sebright, and known by his name. These were for a time a rage, and put all other Bantams to flight in the esteem of fanciers. Never was a greater triumph in feather culture, and if the Germans can boast, as they reasonably may, of resplendent Toy Pigeons of their manufacture, Englishmen can point to the Sebright Bantam and the Almond Tumbler. The Sebright fancy is one which should not be suffered to go down. Bantams are especially ladies' pets, and the Sebright, from its beautiful feathering, and the special skill ladies have in colour and in markings, should be the ladies' bird. A lady with a fair command of money might do wonders with these birds, and produce a sight which would gratify hundreds, I mean a display of Sebrights on a large scale. They do not require much space, but stock birds—that is, male birds, must be kept in addition to exhibition birds. Ladies, I know, object to Game Bantams because of the dubbing, but this objection does not exist in regard to Sebrights. When just hatched they are, perhaps, the most beautiful of all chickens.

The above-mentioned varieties were, as far as I know, the only Bantams which were kept before the advent of poultry shows. There soon came the smaller and better-bred Whites, now far too much neglected, for nothing is prettier than half a dozen spotless White Bantams on a lawn. There came, too, very quickly into fashion the hardy, well-looking, and extremely intelligent Black Bantams, the cocks of which are as handsome as any bird that crows, with their bright rose combs, flowing hackles, and arched tails, and white deaf ears, and rich purple hues not unlike those of a Barb Pigeon. I can speak from much experience of their excellence as layers and not strayers; as layers, these and Black-breasted Reds bear the bell.

Next in order of time, in production and exhibition, come the Game Bantams. These were a great gain to the fancy world, and in the best specimens not very numerous, but I mean such as Mr. Crosland exhibits, they are the ditto of the Game fowl—symmetry, colour, legs, expression of countenance, and even attitudes. I have seen also fairly good Brown-breasted and Duckwings. Whether it is from association or English feeling, we all like to look at a Game cock, however disliking cock-fighting; and these little birds, reproducing in duodecimo the old favourites, have pleased, do please, and will continue to please thousands of English people. All other Bantams have rightly the thick bantamy form, they are like thick-set Shetland ponies, while the Game Bantams are like slim racing ponies. Even the last introduced, the Japanese Bantams, have the thick shape, while they look over-combed, and resemble little men with too large hats.

Thus have I passed in review the different varieties of this beautiful class of poultry, and I should be very gratified if anything I have said should increase the number of their admirers. I have shown that Bantams may be kept by anyone in any garden or yard however small, suiting, of course, numbers to means of accommodation. Bantams, especially the two varieties I have noticed, produce abundance of eggs, and the pullets both of the Black and Game are excellent winter layers. Some people object to the small size of Bantam eggs, that foolish though oft-repeated objection, because it is not quite easy to eat two, three, or four, if you like. There is no law against that that I am aware of, no act of parliament that has been passed in my time, and everybody knows that the best half of an egg is the first half, it is hottest, and best-tasting, and with Bantams' eggs it is but as it were a series of first halves, and such flavour, too! Then, again, the great abundance of delicious eggs greatly pacify our materfamiliases (*vulgo* our missusses) who are apt to scream if they see a little Bantam scratching—no, lightening the soil I call it, of a flower bed; but a pretty little egg, literally or figuratively, stops a pretty little mouth very effectually. Young ladies can easily get sittings of eggs, the pater always allows *you* such things, for I have always noticed that fathers are never selfish or uncivil to their daughters, though too often so to their sons. This, perhaps, is the reason why if sons turn out badly it is rarely the mothers (God bless them) who are to blame, but the fathers have been in fault, not making friends of their sons, trying to rule by terror and not affection, as if the heart were not the most powerful thing of all. A tyrant father naturally produces a deceitful, unloving child. To return, never allow a Bantam cock to be teased or fought with by a servant boy; if so thrash both bird and boy at once, send one off breathless, the other blubbering, and both will be cured.

All Bantams sit well, and are good mothers. The dubbing of the Game must I fear be continued, and the bird not being in the least depressed or daunted by it shows that it does not suffer much. Cut close with stable scissors, and have the kitchen dredge-box at hand, and dust the place well with flour, and henceforth your bird cannot be taken at a disadvantage by any chance adversary. Keep Bantams as pets; exhibitors, adopt one variety as a second horse. Choose your variety according to your individual taste.—Wiltshire Rector.

Manchester and Liverpool Agricultural Society's Show.—The prizes offered at the Show of this Society to be held at

Liverpool on September 6th and 7th, amount to the large sum of £3000. We will only specify two—£100 for the best hunter, and £80 for the best bull. There is also a very liberal prize list for Poultry, first prizes £4, second £3, and third £2. From the exertions made by the Local Executive Committee, we are informed it promises to be the most successful show ever held in the north.

HATCHING DISASTERS.

As I have learnt many "wrinkles" from Mr. Wright's letters, I hope that I shall be able to make him some slight return on the above subject. Before doing so, however, I may remark that my early eggs were this season very bad indeed, but the severe winter led me to expect this; later in the season the eggs were nearly all good.

The plan which I adopt with my sitting hens is this. I have a cellar, into which the frost cannot penetrate, and which I keep in total darkness. Even in the coldest weather, by this method, I find a hen may be off her eggs for a couple of hours without much harm; but should it unfortunately happen that a hen comes off and the eggs are cold, I at once put them into a bowl of warm water, and as soon as they are nicely warm I put them back to the hen or to another hen, and they rarely fail to hatch. On one side of this dark cellar I place a lot of Turner's pens, and in each I make a nest and set a hen. By these means the hens never get together to fight, and the darkness generally prevents them from coming off their nests. My experience leads me to the conclusion that hens, especially strange ones, which all mine are, sit better in the dark. Every morning candles are taken down, and the hens are fed by candlelight, and it is astonishing how soon they learn to come off when the light is brought to them. Generally they require lifting off the nest the first day or two, but after that they rarely want any more inviting than the light. As soon as they have all fed and gone back to their nests, the light is taken from them, and they are, as before, in total darkness. To prevent any unpleasant smell I throw a disinfectant on the floor of the cellar, and a little dry earth is occasionally sprinkled on the bottom of the pens where the hens are.

But having detailed the plan of setting I adopt, I must also say that every hour, from early in the morning to the last thing at night, some one just walks with a candle through the cellar and sees that all the hens are sitting closely. On reading this I fancy I hear some of your readers say, "What a bore! Who would breed poultry to be at this trouble?" My answer is, That what is worth doing at all is worth doing well, and when my chickens on the average make at the lowest computation £1 each, I think it well worth the trouble. Had Mr. Wright used the same plan, the accident which happened to his eggs could not, I think, have occurred.—T. E. Kell.

BATH AND WEST OF ENGLAND SOCIETY'S SHOW AT GUILDFORD.

Although held simultaneously with the Show at Stroud, this meeting proved as successful as any of its predecessors. A great improvement has this year been instituted—viz., having the poultry and Pigeons received on the Monday and judged on the Tuesday morning, instead, as heretofore, having them sent in on the Saturday for adjudication on the Monday. This new arrangement saves the poultry two days' confinement; and doubtless had this change been more generally known, the great access of entries would have afforded the best proof possible that the altered arrangement was duly appreciated by amateurs generally. Another season's trial will convince the Council that this policy will greatly extend the poultry department of the Show, for it was a matter of general congratulation among the exhibitors.

Spanish fowls were well shown; and Mr. Edward Jones, of Bristol, sent pens that would be a great credit to any exhibition, the single cock of this variety being a remarkably perfect specimen. Mr. Martin's well-known rosy-combed pen headed the *Dorkings*, and the Blue and the White Dorking classes were also good. *Cochins* were mostly shown very considerably out of plumage, and the *Brahmas* likewise generally lacked condition. Mr. Mathews's collection of *Game* fowls was sent in particularly high show trim, and his pens stood well on the prize list. *Hamburghs* were fewer than might have been expected, but still most of them were excellent. *Polish* were never before shown so well at this Society's meeting, the Silver and Black varieties being present in abundance, and of first-rate quality. Though the *Crève-Cœurs* were really good, the *Houdans* were far behind what we have seen in past years. A most capital pen of Andalusians was first in the Variety class, Black Cochins second, and a pen of Malays third. Some extraordinarily good Sebright *Bantams* were on view; and the *Ducks* and *Geese*, with Mrs. Seamons and Mr. Fowler at the fore, made this portion of the Show most interesting. Mr. Lythall was first in *Turkeys* with the grand American Birmingham show bird, which it appears, although breeding freely this season, has greatly increased in weight. A large class of very good Turkeys, both Cambridge and Norfolk, were much admired.

In *Pigeons* the Carriers were unusually good, and the Short-faced Tumblers and Pouters not less so. The Red Jacobins were also of far better and sounder colour than common.

The birds were all arranged in a single tier, and the pens being of wood throughout, excepting the fronts, the plumage of the various specimens was secured from injury of any kind. Lovely weather brought together an immense number of visitors, and the Guildford Show will be noted among the many successes of the Bath and West of England Society.

Spanish.—1, E. Jones, Clifton, Bristol. 2, Mrs. E. J. Elrington, Selling, Faversham. 3, H. Beldon, Goitstock, Bingley. *hc*, Nichols, Brothers, Camberwell.

Dorkings.—*Coloured.*—1, J. Martin, Claines, Worcester. 2, J. Goring, Wiston Park, Steyning. 3, Lieut.-Col. Lane, Bracknell. *hc*, G. H. Langford, Sherborne, Albury, Guildford; J. Smith, Shillinglee Park, Petworth; Lord Turnour, Shillinglee Park, Petworth; Lieut.-Col. Lane. *c*, W. B. Boxall, Strathfieldsaye.

Dorkings.—*Blue.*—1 and 2, G. Hine, Westcott, Dorking. 3, W. Philps, Dorking.

Dorkings.—*White.*—1, W. Attlee, Dorking. 2, Lord Sudeley, Toddington, Winchcomb. 3, Miss Fairhurst, Woodlands, Ormskirk. *c*, G. Cubitt, Dorking.

Cochin-China.—*Cinnamon and Buff.*—1, J. K. Fowler, Aylesbury. 2, E. R. Gray, East Leigh, Warminster. 3, H. Lloyd, jun., Handsworth. *hc*, Mrs. Allsopp, Hindhp Hall, Worcester; Miss J. Milward, Newton St. Loe.

Cochin-China.—*Brown and Partridge-feathered.*—1, J. K. Fowler. 2, C. Howard, Peckham. 3, Horace Lingwood, Needham Market.

Cochin-Chinas.—*White.*—1, E. Fearon, Whitehaven. 2, G. Shrimpton Leighton Buzzard. 3, S. A. Wyllie, East Moulsey.

Brahma Pootras.—*Dark.*—1, J. K. Fowler. 2, Horace Lingwood, 3, W. Sims, Stroud.

Brahma Pootras.—*Light.*—1 and 2, H. M. Maynard, Holmewood, Isle of Wight. 3, J. Pares, Guildford. *hc*, J. Morton, Guildford; C. W. Croft, Kingskerswell, Newton Abbott.

Game.—*Black-breasted and other Reds.*—1, S. Matthew, Stowmarket. 2, Rev. G. S. Cruwys, Tiverton. 3, J. Hodson, Weyside, Godalming.

Game.—*Duckwings and other Greys or Blues.*—1, S. Matthew. 2, Rev. G. S. Cruwys. 3, Withheld.

Game.—*Any other Colour.*—1, S. Matthew. 2, G. Potts, Chartham, Canterbury. 3, Rev G. S. Cruwys. *c*, W. Wells, Worplesdon, Guildford.

Hamburghs.—*Golden-pencilled.*—1, H. Beldon. 2, Rev. J. Richardson, Sandy Rectory, Bedfordshire. 3, G. Hine.

Hamburghs.—*Silver-pencilled.*—1, N. Barter, Plymouth. 2, H. Beldon. 3, C. H. Mayo, Puddle Hinton.

Hamburghs.—*Golden-spangled.*—1, Mrs. J. Pattison, Dorchester. 2, H. Beldon. 3, W. H. Tomlinson, Newark.

Hamburghs.—*Silver-spangled.*—1, H. Beldon. 2, Miss E. Browne, Chardleigh Green, Chard. 3, H. M. Maynard. *c*, Mrs. Allsopp; G. Slade, Crewkerne.

Polish.—*Black, with White Crests.*—1, Mrs. Procter, Hull. 2, T. P. Edwards, Lyndhurst. *hc*, T. P. Edwards; D. Mutton, Brighton.

Polish.—*Gold or Silver.*—1, H. Beldon. 2, J. Hinton, Warminster. 3, Mrs. Procter.

Crève-Cœurs.—1, Rev. N. J. Ridley, Newbury. 2, G. Chilton, Littleton, Guildford. 3, J. K. Fowler. *c*, J. J. Malden, Biggleswade.

Houdans.—1, F. Brewer, Milltown, Lostwithiel. 2, G. Slade. 3, J. K. Fowler.

Minorca Fowl.—1, H. Leworthy, Newport, Barnstaple. 2, Miss S. H. Northcote, Upton Pyne, Exeter. 3, No competition.

Any other Variety.—1, W. Wildey, Cosham. 2, H. J. Godfrey, Hammersmith. 3, J. Hinton, Warminster. *hc*, J. K. Fowler, Aylesbury; J. Y. Hadden, Guildown, Guildford; Rev. N. J. Ridley, Newbury; S. A. Wyllie, East Moulsey.

SINGLE COCKS.

Spanish.—1, E. Jones, Clifton, Bristol. 2, R. Wright, London. *hc*, J. K. Fowler.

Dorkings.—*Grey.*—1, J. Chisman, Rownhams, Southampton. 2, J. Smith. *hc*, J. Smith; J. Martin, Claines.

Dorkings.—*Blue or White.*—1, Miss Fairhurst, Woodlands, Ormskirk. 2, G. Hine, Westcott, Dorking. 3, W. Attlee, Dorking. *c*, W. Messenger, Woodlands-Wonersh, Guildford.

Cochin-Chinas.—1, J. Watts, King's Heath. 2, Horace Lingwood, Crecting, Needham Market. 3, H. Tomlinson, Moseley, Birmingham. *hc*, D. W. J. Thomas, Ely Cottage, Brecon (2); J. Chisman, Rownhams, Southampton. *c*, Mrs. Allsopp, Hindlip Hall.

Brahma Pootra.—1, Rev. N. J. Ridley, Newbury. 2, J. H. Cuff, Holloway. 3, J. Watts.

Game.—*Black-breasted and other Reds.*—1, R. Hall, Cambridge. 2, S. Matthew, Stowmarket. *c*, Rev. G. S. Cruwys, Tiverton.

Game.—*Any other Colour.*—1, S. Matthew, Stowmarket. 2, Rev. G. S. Cruwys. 3, R. Hall, Cambridge. *c*, Miss M. Blackmore, Alresford; Miss S. H. Northcote.

Hamburghs.—*Pencilled.*—1, H. Beldon. 2, J. K. Fowler. 3, C. H. Mayo, Puddle Hinton, Dorchester.

Hamburghs.—*Spangled.*—1, Mrs. J. Pattison, Dorchester. 2, Miss E. Browne, Chard. 3, H. Beldon. *hc*, N. Barter, Plymouth. *c*, J. Newiek, Hinton Saint George.

Bantams.—*Gold or Silver-laced.*—1, G. F. Hodson, North Petherton, Bridgewater. 2 and 3, Rev. G. S. Cruwys.

Bantams.—*Black or White.*—1 and 2, Rev. G. S. Cruwys. 3, H. M. Maynard, Holmewood, Ryde, Isle of Wight. *c*, Mrs. E. J. Elrington, Selling, Faversham.

Bantams.—*Game.*—1, C. Howard, Peckham. 2, C. J. Spary, Ventnor, Isle of Wight. 3 and *hc*, T. W. Anns. *c*, J. Pares.

Bantams.—*Cock, Any Variety.*—1, W. Adams, Ipswich. 2, C. Parsons, Cornhill, Dorchester. 3, A. Crafer, Sutton.

Crève-Cœur or Houdan.—1, Rev. N. J. Ridley, Newbury. 2 and 3, No competition.

Polish.—1, H. Beldon. 2, D. Mutton. 3, Mrs. Procter.

Any other Variety.—1, Rev. N. J. Ridley. 2, J. Hinton. 3, H. Beldon. *c*, W. Wildey, Cosham.

Ducks.—*Aylesbury.*—1 and 3, Mrs. Seamons, Hartwell, Aylesbury. 2 and *hc*, J. K. Fowler.

Ducks.—*Rouen.*—1, Mrs. Seamons. 2, J. Pares, Guildford. 3, J. K. Fowler *hc*, W. B. Stubbs, Alresford; J. K. Fowler. *c*, G. Cubitt, M.P., Dorking.

Ducks.—*Any other Variety.*—1, J. K. Fowler. 2, S. B. Kennard, Marnhull, Blandford. 3, J. Goring, Steyning.

Geese.—1, Mrs. Seamons. 2, J. K. Fowler. 3, W. Attlee.

Turkeys.—1, F. Lythall, Banbury. 2, Rev. N. J. Ridley. 3, J. Goring. *hc*, G. Ellis, Betchworth, Reigate; Mrs. Mayhew, Great Baddow, Chelmsford.

PIGEONS.

Carriers.—*Cock.*—1, J. C. Ord, Pimlico. 2, H. M. Maynard, Ryde. *hc*, H. Yardley, Birmingham; J. C. Ord. *Hen.*—1, J. C. Ord. 2, H. M. Maynard. *hc*, H. Yardley; J. C. Ord.

Pouters.—*Cock.*—1, H. Yardley. 2, P. H. Jones, Fulham. *Hen.*—1, P. H. Jones. 2, H. Yardley.

RUNTS.—1, P. H. Jones. 2, S. A. Wyllie, East Moulsey. *hc*, Lady F. Bushby, Kingston Hill. *c*, H. Yardley.
TUMBLERS (Almond).—1 and 2, J. Ford, London.
TUMBLERS (Any other variety).—1, F. Moore, Burnley. 2, P. H. Jones. *hc*, J. Ford.
JACOBINS.—1, C. Bulpin, Bridgwater. 2, H. M. Maynard. *c*, Miss J. Milward, Newton St. Loe.
FANTAILS.—1, W. H. Tomlinson, Newark. 2, H. M. Maynard. *hc*, P. H. Jones. *c*, H. Yardley; C. Bulpin; Miss J. Milward.
OWLS.—1, P. H. Jones. 2, C. Bulpin. *hc*, H. Yardley.
TRUMPETERS.—1, P. H. Jones. 2, C. Bulpin.
BARBS.—1, H. Yardley. 2, J. C. Ord; Extra 2, H. M. Maynard. *hc*, H. M. Maynard; P. H. Jones.
TURBITS.—1, H. Yardley. 2, P. H. Jones.
NUNS.—Prizes withheld, all being trimmed.
DRAGOONS.—1, H. Yardley. 2, J. Watts, King's Heath. *hc*, C. Bulpin. *c*, H. M. Maynard.
ARCHANGELS.—1, C. Bulpin. 2, H. Yardley.
ANY OTHER VARIETY NOT PREVIOUSLY MENTIONED.—1 and 2, C. Bulpin. 3, H. Yardley. *hc*, H. Yardley; Mrs. E. M. Paget, Hoxne, Scole, Suffolk (2).

Mr. Edward Hewitt, of Birmingham, judged the ponltry, and Mr. Tegetmeier the Pigeons.

STROUD POULTRY SHOW.

THIS Show was held on May 30th and 31st, and proved highly successful, there being upwards of 1200 entries. The following is the list o awards:—

DORKINGS.—*Coloured.—Cock.*—1 and Cup, L. Patton. 2, Hon. H. Fitzwilliam 3, J. Martin. *Hens.*—1 and Cup, L. Patton. 2, F. Parlett. 3, W. Arkwright. *hc*, Rev. A. Cornwall; T. A. Dean; Mrs. Hurt; L. Patton.
DORKINGS.—*Silver-Grey.—Cock.*—1, O. E. Cresswell. 2, T. Ace. *Hens.*—1, O. E. Cresswell. 2, W. E. George.
COCHINS.—*Cinnamon and Buff.—Cock.*—Cup and 2, W. A. Taylor. 3, H Lacy. *hc*, H. Lloyd, jun.; J. Sichel. *Hens.*—1 and Cup, A. Taylor. 2, H. Lacy. 3, W. Sanday. *hc*, G. Heath; W. Ryland; H. Lacy; J. Sichel; J. Cattell. *c*, W. Ryland.
COCHINS.—*Brown and Partridge-coloured.—Cock.*—1, E. Tudman. 2, H. Lacy. 3, G. Lamb. *hc*, J. Stephens; J. N. C. Pope. *Hens.*—1, W. A. Taylor. 2, J. Stephens. 3, H. Lacy. *hc*, R. B. Wood.
COCHINS.—*White.—Cock.*—1, H. Dent. 2 and 3, J. N. W. Whitehead. *hc*, W. E. George. *Hens.*—1, J. Sichel. 2, Mrs. A. Williamson. 3, E. Fearon.
BRAHMAS.—*Dark.—Cock.*—1 and Cup, H. Lacey. 2, J Stalker. 3, Rev. J. Richardson. *hc*, Rev. J. W. Bowen; J. S. Tainton; W. H. Denison; H. Wells. *c*, O. R. Davies; L. Wright; R. H. Tyte. *Hens.*—1 and Cup, Mrs. Hurt. 2, J. Sichel. 3, H. Lacy. *hc*, T. Griffiths; Hon. Miss D. Pennant; H. Lacy. *c*, H. Morrell.
BRAHMAS.—*Light.—Cock.*—1, Mrs. A. Williamson. 2, H. M. Maynard. 3, J. Beach. *hc*, Mrs. A. Worthington: J. Bloodworth; C. F. Wilson; W. Whiteley. *Hens.*—1, T. A. Dean. 2, Mrs. A. Williamson. 3, J. R. Rodbard.
SPANISH.—*Cock.*—Cup, I, and 3, E. Jones. 2, Mrs. Allsop. *hc*, T. Ace; E. Jones; C. Taylor. *c*, J. F. Sillitoe. *Hens.*—Cup and 1, E. Jones. 2, T. Bamfield. 3, H. Lane. *hc*, T. Bamfield; E. Jones (2); J. F. Dixon; Nicholls, Bros., Boulton & Gliddon. *c*, E. J. W. Shalford; J. R. Rodbard.
HOUDANS.—*Cock.*—1, R. B. Wood. 2, J. Weeks. 3, D. Lanc. *c*, F. Brewer. *Hens.*—1, R. B. Wood. 2, Hills & Co. 3, D. Lane. *hc*, F. Brewer.
CREVE-CŒURS.—*Cock.*—Cup and 1, W. R. Park. 2, J. Sichel. 3, H. Wyndham. *Hens.*—Cup and 1, H. Wyndham. 2, R. B. Wood. 3, J. J. Walter. *hc*, H. Beldon. *c*, W. Dring.
GAME (Black-breasted Reds).—*Cock.*—1, R. Hall. 2, E. Brough 3, J. Mason. *hc*, G. R. Smith; H. Gibson; W. E. Oakley. *c*, H. W. Julian. *Hen.*—Cup and 1, S. Matthew. 2, G. Lucaa. 3, R. Stock. *hc*, Hon. and Rev. F. Dutton; Miss M. Fletcher.
GAME.—*Brown-breasted Reds.—Cock.*—1 and Cup, H. M. Julian. 2, A. Ashley. 3, W. Boyes. *hc*, G. Clements. *c*, Miss M. Fletcher (2). *Hens.*—1, S. Matthew. 2, H. M. Julian. 3, J. Jekin. *hc*, G. R. Smith; W. Boyes.
GAME.—*Duckwings and other Greys and Blues.—Cock.*—1, S. Matthew. 2, H. Julian. 3, W. Boyes. *hc*, Miss M. Fletcher; G. S. Sainsbury; J. H. Bradwell. *Hen.*—1, S. Matthew. 2, H. M. Julian. 3, Miss M. Fletcher. *hc*, E. Bell.
HAMBURGHS.—*Golden-spangled.—Cock.*—1 and Cup, H. Beldon. 2, C. Parsons, 3, J. Buckley. *hc*, H. Pickles, jun. *Hens*—1, J. Buckley. 2, H. Beldon. 3, Miss M. Newton. *hc*, S. & R. Ashton; E. Collings; J. Bairstow; E. T. Gardom.
HAMBURGHS.—*Silver-spangled.—Cock.*—1, H. Beldon. 2, H. Pickles, jun. 3, H. Beldon. *Hens.*—1 and Cup, H. Beldon. 2, H. Pickles, jun. 3, Miss M. Newton. *c*, J. Watts.
HAMBURGHS.—*Golden-pencilled.—Cock.*—1, H. Beldon. 2, H. Pickles, jun. 3, W. Speakman. *hc*, B. Mollett. *Hens.*—1, Rev. J. Richardson. 2, H. Pickles, jun. 3, H. Beldon. *hc*, C. Bloodworth.
HAMBURGHS.—*Silver-pencilled.—Cock.*—1, W. Moor-Mann. 2, H. Beldon. 3, H. Pickles, jun. *Hens*—1, W. Moor-Mann. 2, H. Pickles, jun. 3, H. Beldon.
HAMBURGHS.—*Black.—Cock.*—1 and 3, D. Lord. 2, H. Beldon. *c*, Rev. W. Serjeantson. *Hens.*—1, T. Bush. 2, T. Walker, jun. 3, W. Collyer.
POLISH.—*Golden-spangled.—Cock.*—1, M. Nicholla. 2, W. Silvester. 3, W. Harvey. *Hens.*—Cup, H. Beldon. 2, W. Harvey. 3 and *hc*, W. K. Patrick. *c*, W. K. Patrick; H. Beldon.
POLISH.—*Silver-spangled.—Cock.*—Cup, H. Pickles, jun. 2, H. Beldon. 3, G. C. Adkins. *Hens.*—1, H. Beldon. 2 and 3, C. Bloodworth.
POLISH.—*Black with White Crest.—Cock.*—1, T. Dean. 2, T. P. Edwards. *Hens.*—1, T. Dean. 2 and 3, T. P. Edwards.
ANY OTHER VARIETY.—*Cock.*—1, J. Sichel (Pekin Bantam). 3, T. Wilson (Black Cochin); Hon. C. Fitzwilliam (La Flèche). *Hens.*—1, F. Wilton (Black Cochins). 2, Mrs. Llewellyn (White Sultana). 3, J. Sichel (Pekin Bantama). *c*, J. Hinton (Malaya); R. Loft (Sultana); J. Watts (Sultane); Lady Gwydyr (Silkies).
BANTAMS (Game).—*Black-breasted Reds.*—Cnp, J. C. & E. Newbitt. 2, J. Mayo. 3, W. Adams. *hc*, T. W. Anna; J. R. Robinson; J. Mayo; E. Payne; Williams and Straw; J. C. & E. Newbitt; G. Smith. *Brown-breasted Reds.*—1, S. Beighton. 2, Rev. F. Cooper. 3, J. C. & E. Newbitt. *Any other Variety.*—1 and 2, J. C. and E. Newbitt. 3, J. Pearson.
BANTAMS.—*White Clean-legged.*—1, H. Beldon. 2, A. G. Bloodworth. 3, Rev. G. S. Cruwys.
BANTAMS.—*Black Clean-legged.*—1, S. & R. Ashton. 2, J. Mayo. 3, J. K. Robinson. *hc*, T. Bush; J. Watts; Miss C. Cannan.
BANTAMS.—*Gold and Silver Sebrights.*—Cup and 2, M. Leno. 3, Rev. G. S. Cruwys. *c*, H. Yardley; Miss J. M. Frew.
SPECIAL SELLING CLASS.—*Cock.*—1, T. A. Dean (Light Brahma). 2, E. Brown (Spanish). 3, H. Thompson (Gold Hamburgh). *hc*, H. Yardley; W. A. Barnett (Buff Cochins). *Hens*—1 and 2, H. Yardley. 3, J. Sichel.
DUCKS.—*White Aylesbury.*—1, Mrs. Seamons. 2, J. K. Fowler. 3, E. Leech. *hc*, G. Hanks; J. K. Fowler. *c*, Mrs. Seamons.
DUCKS.—*Rouen.*—1, E. Leech. 2, L. Patten. 3, W. H. Denison.
DUCKS.—*Black East Indian.*—1, Rev. W. Serjeantson. 2, W. E. George. 3, W. Pratt. *hc*, G. Sainsbury (2).
DUCKS.—*Any other Variety.*—1, M. Leno (Mandarina). 2, Rev. W. Richardson (Carolinas). 3, J. K. Fowler; *hc*, S. S. Dickinson, M.P. (Muscovy).
SELLING CLASS.—1, G. Hanks (Aylesbury). 2, W. Stephens (Rouen). 3, H. Dowsett (Rouen).
MALAYS.—*Cocks.*—1, Rev. A. G. Brooke. 2, W. B. Payne. *Hens.*—1, Rev. A. G. Brooke. 2, J. S. Rootb.

PIGEONS.
CARRIERS.—*Black.—Cock.*—1, E. Horner. 2, H. Yardley. 3, R. Fulton. *hc* and *c*, R. Fulton. *Hen.*—1, E. Horner. 2 and 3, R. Fulton.
CARRIERS.—*Dun.—Cock.*—1 and 3, H. Yardley. 2, R. Fulton. *Hen.*—1 and 3, H. Yardley. 2, R. Fulton.
POUTERS.—*Any Colour.—Cock.*—1 and 3, A. H. Stewart. 2, R. Fulton. *hc*, R. Fulton; E. Horner. *c*, H. Yardley; W. Nottage; T. E. Dew. *Hen.*—1, E. Horner. 2 and 3, R. Fulton. *vhc*, R. Fulton. *hc*, H. Yardley.
TUMBLERS.—*Almond.*—1, R. Fulton. 2, T. Waddington. 3, E. Horner. *hc*, H. Yardley.
TUMBLERS.—*Any other Variety.*—1, R. Fulton (Beards). 2, E. Horner (Mottled Tumblers). 3, H. Yardley (Tumblers).
JACOBINS.—*Any Colour.*—1 and 3, R. Fulton. 2, F. Waitt. *vhc*, C. Stephens. *c*, H. Yardley; R. Fulton; E. Horner.
BARBS.—*Any Colour.*—1, R. Fulton. 2, J. Russell. 3, E. Horner. *hc*, R. Fulton. *c*, H. Yardley (2); R. Fulton.
FANTAILS.—*Any Colour.*—1 and 2, H. Yardley. 3, A. M. Yetts. *vhc*, G. H. Gregory. *hc*, J. T. Lovcridge.
TRUMPETERS.—*Any Colour.*—1, R. Fulton. 2, T. Waddington. 3, E. Horner. *hc*, H. Yardley.
OWLS (ENGLISH).—*Any Colour.*—1 and 2, Miss E. Cannan. 3, J. Thresh. *c*, R Fulton.
NUNS.—1, H. Yardley. 2, E. T. Dew. 3, T. A. Dean. *hc*, G. H. Gregory.
TURBITS.—*Any Colour.*—1, E. Horner. 2, G. H. Gregory. 3, E. T. Dew. *vhc*, T. Waddington. *hc*, H. Yardley.
DRAGOONS.—*Any Colour.*—1, T. Chambers, jun. 2, T. Waddington. 3, W. Bishop. *hc*, T. Waddington. *c*, A. Easton; J. Watts.
RUNTS.—*Any Colour.*—1, H. Boyer, Bourne. 2, H. Yardley. 3, W. Masland.
ANTWERPS.—*Any Colour.*—1, E. Horner, Harewood, Leeds. 2, J. H. Bradley, Birmingham. 3, R. Fulton. *c*, H. Yardley.
ANY OTHER VARIETY.—1, R. Fulton (Pigmy Ponters). 2, W. T. Loder, Bath (Ice). 3, G. H. Gregory, Taunton (Ice). *hc*, E. Horner. *c*, T. Waddington (Porcelain Ice).
SELLING CLASS.—1, R. Barrett (Trumpeters). 2, F. Waitt, Birmingham. 3, W. S. Loder (German Toys). *c*, S. Stephens, jun. (Agate Tumblers); F. Waitt; E. Horner.
Cup for most points, R. Fulton.

RABBITS.
LOP-EARED.—*Self-coloured.*—1, E. Gravil, jun. 2, A. Easton. 3, J. G. Quick. *hc*, C. Leat; J. G. Quick.
LOP-EARED.—*Black and White or Blue and White.*—1, H. Ridley. 2, C. King. 3, A. Easton. *hc*, J. G. Quick. *c*, W. Arkwright.
LOP-EARED.—*Yellow and White.*—1, W. Arkwright. 2, P. Ashton. 3, J. E. Palmer. *hc*, A. Easton. *c*, E. Vaughan.
LOP-EARED.—*Tortoiseshell.*—1, A. Easton. 2 and 3, C. King. *hc* and *c*, E. Gravil, jun.
LOP-EARED.—*Grey and White*—1, J. Quick. 2, —Gravil, jun. 3, W. Arkwright. *hc*, C. M. Hogg. *c*, F. Johnstone.
HIMALAYAN.—1, J. Boyle, jun. 2, J. Butterworth. 3, H. Cawood. *hc*, J. G. Quick; N. H. Tomlinson.
ANGORA.—1, C. King. 2 and *c*, R. Barrett, jun. 3, H. Cawood. *hc*, J. Butterworth.
SILVER-GREY.—1, A. H. Etches. 2 and *hc*, S. G. Hudson. 3, J. Wigmore.
ANY OTHER VARIETY.—1, J. Boyle, jun. (Dutch). 2, F. Sabbage (Dutch Blue). 3, R. Barrett, jun (Dutch). *hc*, H. Cawood (Belgian Hare). *c*, S. G. Hudson (Belgian Hare).
SELLING CLASS.—1 and *hc*, C. King. 2, E. Vaughan. 3, J. G. Quick.
Cup for most points—C. King, St. John's Wood.

CANARIES.
NORWICH.—*Clear Yellow.*—1 and 2, W. Walter. 3, R. Mackley. *vhc*, G. Barneaby; Moore & Wynne. *c*, Moore & Wynne (2). *Clear Buff.*—1, J. Close. 2 and 3, W. Walter. *hc*, R. Mackley. *vhc*, Moore & Wynne.
NORWICH.—*Marked or Variegated Yellow.*—1, 3, and *hc*, Moore & Wynne. 2, J. Close, Derby. *c*, Messrs. Audley, Leicester; R. Mackley, Norwich (2). *Marked or Variegated Buff.*—1, J. Close. 2 and *hc*, W. Walter, Winchester. 3, Moore & Wynne. *vhc*, J. Spence, Hendon, Sunderland. *c*, Messrs. Audley.
NORWICH.—*Any other Variety.*—1, 2, and 3, Moore & Wynne. *hc*, R. Mackley. *c*, W. Walter.
BELGIAN. *Clear Yellow.*—?, W. Walter. 3, A. Smith. *c*, J. Close; R. Mackley. *Clear Buff.*—2, J. Close. 3, W. Walter. *Marked or Variegated Yellow.*—2, S. Spinke *Marked or Variegated Buff.*—2, J. Close.
LIZARD.—*Golden-spangled.*—1 and 2, H. Ashton. 3, R. Mackley. *hc*, E. Lulham. *Silver-spangled.*—1, H. Ashton. 2, R. Mackley.
ANY OTHER VARIETY.—1 and *vhc*, H. Ashton. 2, J. Close. 3, Moore & Wynne.
Cup for most points—H. Ashton, Polefield Hall, Prestwich.

MULES.
GOLDFINCH.—*Variegated Yellow.*—1 and 3, H. Ashton. 2, E. Lulham. *Variegated Buff.*—1, J. Spence. 2 and *hc*, H. Ashton. 3, W. Smith. *c*, W. L. Chapman. *Dark Jonque.*—1, A. Webster. 2 and *vhc*, Moore & Wynne. 3, J. Harrison. *Dark Mealy.*—1, W. L. Chapman. 2, W. Smith. 3, H. Walker.
ANY OTHER VARIETY.—1, A. Webster, jun. 2, J. Spence. 3 and *hc*, H. Ashton. *vhc*, G. Barnesby; H. Ashton.
SELLING CLASS.—1, 2, and 3, Mrs. Admiral Giffard.

BRITISH BIRDS.
GOLDFINCH.—1, W. Arkwright. 2, Capt. C. H. Fisher. *c*, J. Harrison; W. Smith; R. Mackley.
BULLFINCH.—1 and 2, W. Walter. *c*, A. Webster, jun.
LINNET.—1, J. Spence. 2, J. Harrison. *vhc*, A. Webster, jun.
SKYLARK.—1, J. Harrison.
BLACKBIRD.—1, J. Edwards. 2, W. Smith. *vhc*, W. F. Pride.
SONG THRUSH.—1, G. Dommett. 2, W. Smith.
WOODLARK.—2, H. Walker.
ROBIN.—2, F. Johnstone.
ANY OTHER VARIETY.—1, A. P. Goulding. 2, A. Webster, jun. *vhc*, T. A. Cokayne; F. Johnstone. *hc*, W. Smith; W. Walter; R. Mackley.

FOREIGN BIRDS.
COCEATOO.—*Leadbeater or Rose-breasted.*—2, E. Adams, Stroud.
PARROT.—*Grey.*—1, Miss M. Webb, Stroud. 2, W. Walter, Winchester. *Green or any Variety except Grey.*—1, H. Lusty, Stroud (Green Parrot). 2, W. Walter (King Parrot).
LOVE BIRDS.—1, R. Mackley, Norwich. 2 and *vhc*, W. Walter.
AUSTRALIAN PARRAKEETS.—1 and 2, W. Walter. *hc*, R. Mackley.
PARRAKEETS OR SMALL PARROTS (Any variety).—2, W. Walter.
ANY OTHER VARIETY OF FOREIGN BIRD.—1, J. R. Buckler, Gannicox (American Horned Owl). 2, F. Wilton, Gloucester (Cardinal). *vhc*, A. Webster, jun. (Java Sparrows); W. Walter (Parson Finches). *c*, W. Walter (Java Sparrows).

JUDGES.—*Poultry:* Rev. G. F. Hodson and Mr. R. Teebay. *Pigeons:* Mr. T. J. Cottle. *Rabbits:* Mr. C. Rayson. *Canaries and Cage Birds:* Mr. W. A. Blakston.

NOTES FROM MY CANARY ROOM.—No. 6.

". . . . I AM sorry that my young Canaries do not seem to be able to withstand the north-east winds which are more

busy than usual this year. I cannot get mine to live, they *will* die."

"I have only three left, and they are of no value. I have had forty. There is something more injurious at work, however, than low temperature. I fancy these birds' constitutions have been weakened by generations of unnatural habits, and I want to find a substitute for the insect-food upon which, I believe, the young of all seed-eating birds are fed. Egg is not all that is required. Mine are treated to a variety of food—lettuce one day, groundsel the next, or chickweed and dandelion heads; groats and rough oatmeal are placed within reach; mawseed is given in small quantities. They have choice of food, good water, and the closest attention, but they will not grow but remain a few days half-fledged, and then go to their brothers and sisters who are in the happy hunting grounds."

"My wife is an indefatigable attendant, and many tears have been shed over the extremely ugly remains of the produce of Nos. ——, Crystal Palace." So writes a correspondent. The most general complaint is, "My hens will not feed." I do not mean that it is a complaint peculiar to this, but to all seasons. It is the difficulty of difficulties, the trouble which above all other troubles most deeply concerns breeders. It is an extraordinary thing, however, that it is generally the best birds which die—that is, if we are to believe all we are told. I should think there are more evenly-marked Canaries and clean Mules than any other class, which die in their infancy. It is astonishing how many some men lose in a season—whole nests of them. But such die very young!

The untimely death of young Canaries through the neglect of their mother who in this case is, I am sorry to say, the parent guilty of neglect, and the sin of throwing her children on the parish, is a loss which can only be averted by keeping a number of nurses whose abilities, remember, can only be tested by experience. A character from her last place is not a criterion of any hen's merits or demerits as a mother, nor is what she did or did not last year any guarantee for this. Last season she may have been so callous and deaf to every call of maternal duty as to starve or smother every nest, while this year she may be a model nurse. The fact is simply this, that nobody can by any mode of treatment whatever insure that any one hen shall put as much as a single morsel into the gaping mouths of her progeny, or that she will do other than quietly settle herself down on them and deliberately smother them. I am quite prepared to find that some will reply, "I feed on so and so, and I do so and so, and I never had this great mortality." That may be, but your turn will come when all the so and so you can devise will not save them, and your morning duty will be to throw out your dead birds, your afternoon duty ditto, and your evening duty the same as that of the morning and afternoon.

On the other hand, when a hen, or better still, both cock and hen feed properly, all goes on as prosperously as if the birds were in their natural wild state. The young birds, never naked, lie in the nest covered with down, and curled-up like hairy caterpillars; they grow amazingly and develope feathers rapidly, their first downy dress still fluttering about at the tips of the more matured feathers instead of being rubbed off, as is the case with half-starved and half-clad unfortunates. They look strong and fat and lusty, and their crops are always so full that it seems almost a labour for them to lift up their heads for the food with which their parents never seem tired of cramming them.

To bring about this most desirable state of affairs, nurses—a number of nurses—too many rather than too few must be kept. How to get them is the question. They can only be had by putting-up as many common hens as room can be found for, in the hope that among them there may be some which will attend to their duties properly. The eggs and young birds of such must be thrown away, and those of more valuable ones substituted: hence the policy of getting them as common and worthless as possible that there may be no inducement to rear their young, and no hesitation in destroying them. If you do not like to be guilty of the crime of infanticide, place the common ones under the more aristocratic mother and give them a chance. It will do her good to try and perform her maternal duties, and it may be that the disinclination to feed will disappear and both nests be saved. Something may be done by giving frequent supplies of fresh food, and (I think I have said this before), in the absence of a better mother, by doing the best you can to feed the neglected birds yourself with yolk of hard-boiled egg. Moisten it more or less according to their age, making it for very young birds almost creamy; take a little on the end of a blunt-pointed piece of stick, give a chirp, something between a squeak and a kiss, and touch one of the little fellows on the side of the beak, when he will open his mouth and continue so to do as quickly as you can fill his little hatchway, till he lays down his head a satisfied cormorant, Q.E.F.

The shoals and quicksands of infancy passed, and the young birds out of danger, by which I mean so far feathered that they are not dependant upon the hen for warmth, the cock will take care they are not neglected for the future. The hen will by this time, most probably, want to go to nest again; supply her with a second box and nesting material, or she will strip the young ones. When she lays remove the cock and the young birds into another cage, where they will keep him going till they can feed themselves. As soon as you see them helping themselves from the egg box, decrease the supply of soft food, and give canary seed rough-ground in a coffee-mill.—W. A. Blakston.

PROPAGATION OF LIGURIANS.

Having a good strong stock of Ligurian bees, I wish you would kindly inform me the best way to proceed in order to make a few artificial swarms. I have some good strong stocks of black bees, can I use them for the purpose? and at the same time can I raise a few artificial queens to unite with my black swarms? Having bought the bees and bee furniture of an old apiarian, there are many things included that I do not understand; for instance, two nucleus boxes quite new. Can you tell me for what purpose they are intended, and how to use them? The books I have seen do not give me any information about them, and if you know of one that would do so I should be glad to procure it.—G. B. C.

[We presume that your colony of Ligurians is in a hive having moveable frames, and that you are acquainted with the method of removing and examining these frames. We also presume that your stock is headed by a really pure Ligurian queen, otherwise all your labour in endeavouring to propagate Ligurians will be thrown away.

As you desire to make your stocks of common bees available, you had better at once, if not already domiciled in frame hives, proceed to transfer the combs and bees of some of them into such hives, similar in every respect to that you have in use. We also presume that you know how to "drive" bees. If not, you can procure "Bee-keeping for the Many," which can be obtained from this office for five stamps, and which will give you sufficient information on that head.

Having driven out the bees of a hive, carefully cut out the combs, fit them "into the frames, and support them therein by strips of wood 3-8ths of an inch wide and 1-16th thick, tacked at the top and bottom, two on each side of every comb, and by zinc clips passing over the top of the bar. Thick combs must be pared down, but take care that the cells on either side are left of equal length, and that the 'partition wall' is in the centre of each bar. Crooked combs should be set straight, and if not sufficiently pliable to permit of this being done, may be slightly warmed before the fire. If the Woodbury hive is used it will be found convenient to remove the projecting rib from the bars, and the bees will attach the combs to them with greater facility if their under surfaces be coated with melted wax. Having completed the job, and arranged the combs in the same order in their new apartment as that which they occupied in their old one, deepen the hive by the addition, on the top, of another, from which the frames and crown and floor-boards have been removed, set it on the old stand, and knock out the cluster of bees into the upper hive on the top of the frames of the lower one, putting on the crown with the utmost celerity. Next morning take away the inserted hive, and the day after that remove the supports from all the combs which the bees have fixed. Stocks of bees with combs not less than a year old should be selected for this operation, which must in no case be attempted with swarms of the current year, as their combs are too soft to sustain the weight of their contents without crushing when their natural supports have been removed."

While these transferred stocks are recovering themselves, and making good the deficiencies in their combs, &c., you may proceed with the necessary manipulations towards obtaining young queens from your one Ligurian colony. You will perceive that in the following directions we also reply to your query respecting the use of nucleus boxes.

Your stock hive, A, being sufficiently populous for the pur-

pose, choose a fine day, and having an empty hive ready, place it on a stand close by the stock. You now lift out and examine each comb in order to discover the queen, beginning at an end one, which, when satisfied that her majesty is not on it, is rested on one side of the box. The next comb having been inspected with a similar result, is slipped into the place which was occupied by the first, and so on until the queen is discovered on the surface of one of the combs. This comb, with the queen and the adhering bees, is placed in the second box, B. The other frames are inserted in their positions, and, if possible, one or more empty worker combs are given on both sides of the brood comb. B, with the queen, is put on the stand that A occupied. The combs in A having been brought together, so as to allow of no vacant space in the centre of the hive, and a frame with or without worker comb having been substituted for the one removed, the cover is fixed on, and the hive is shifted at once to another part of the garden. The bees on the wing, and many which will leave the stock hive, will join their queen in the new hive, B.

The bees, after the discovery of the loss of their queen, will soon commence the formation of royal cells. In due time a young princess will arrive at maturity, and on gaining her liberty immediately endeavours to destroy all her less-matured rivals. You should prevent this destruction by a timely removal of some of the superfluous royal cells, which you may make available in the formation of other artificial swarms.

Your nucleus boxes can now be called into service. You must choose one of your transferred stocks which is well supplied with bees and brood, and proceed to examine the combs as before; but this time your object is to discover a brood comb with eggs or brood of suitable age, and to make yourself sure that the queen is not on it. Having satisfied yourself on this point, you take two of the superfluous royal cells which you have cut out from the old stock A, and insert them in the middle of the brood comb, being careful that the cells occupy their proper positions, and are not in any way bruised or mutilated. It is best not to rest satisfied with the fact of your not having been able to find the queen on the brood comb you have chosen, but to search diligently through the remaining combs until you catch sight of her. Having done so you brush off the adhering bees from one or two other brood combs, and, instead of the ordinary cover, substitute one of perforated zinc, close the entrance also with the same, and remove the box within doors until the evening. As in the former case, an empty frame must be given to the old stock at the side, the others being pushed up together, so as to leave no vacant space near the centre. The nucleus must be examined the next day to see if the sealed royal cells appear to be all right, or whether fresh ones have been commenced, and also to determine if there is a sufficient population. If not, some more bees must be given to it in the same manner as before from the same hive. When a young queen has commenced breeding you can destroy or remove the queen of one of your common stocks, and having captured the young queen, you must confine her with two or three of her own bees in a queen cage (a small wire pipe cover sold for the purpose) on the surface of one of the brood combs for about twenty-four hours, when the hive must be opened and the prisoners liberated. A few days afterwards the combs must be again inspected, to ascertain if the queen has been favourably received, or whether she has been destroyed. The conclusion may be arrived at either by obtaining a sight of her, or by finding royal cells in the course of formation.

These small artificial swarms in the nucleus boxes may, if you please, be built up into strong colonies by another process. As soon as the queens are hatched out, open any of your frame hives and choose one or more combs containing brood in an advanced state. Brush off with a feather all the bees, and give the comb or combs to the nucleus. When the population has increased sufficiently, the combs and bees of the small hive may be transferred to a full-sized box, and more brood combs may be given. We have frequently built up our best and strongest hives in this way.

As your stocks consist almost entirely of common bees, it is nearly certain that your young queens will pair with common drones, so that their worker progeny will be only bybrids. But as the drones raised by these queens will be pure, you will have to rear a fresh supply of young princesses in the following season, and again go through the process of exchanging queens in all your stocks, with the exception of that which contains your original Ligurian queen if she be still alive and vigorous.

If you really desire to thoroughly ligurianise your apiary you must forego all expectation of deriving any benefit from it in the way of honey, and must be prepared to sacrifice every queen which does not exhibit by her progeny unqualified proof of purity. You must also be prepared to see a considerable weakening of the strength of some or all of your colonies, and, if necessary, supply artificial food with a judicious but liberal hand. Either go through the matter completely, or not at all.

You will find Langstroth's work on the honey bee the one best suited to your requirements. It can be ordered through any bookseller.—Eds]

ARTIFICIAL SWARMING.

I HAVING a strong stock of hybrid bees which I wish to prevent swarming naturally, but which I also wish to propagate, I propose doing so in the following manner, and wish for advice under the circumstances.

Some fine morning I take the stock from its place in the bee house (it is in a Woodbury frame hive), and drive the bees upwards into a similar hive with or without empty combs fitted into frames, which hive and bees I remove to another garden about ten minutes' walk from mine, with large houses and trees between. Will the returning bees make up a small stock sufficient to carry on the original colony, which I replace in its former position, and will they hatch out a queen in the correct style?

I am not much of a bee-master yet, or I would endeavour to take out the frame with the queen on it, and place her with her attendants in a nucleus box; but the bees have built comb between the ends of the frames and the sides of the hive to such an extent that I fear a fearful row would result if I endeavoured to abstract one or two, and in this case alone I labour under another disadvantage—not knowing how to smoke a pipe, and I can get no one to do it for me, as my manipulating powers are not credited to a sufficient extent.

Also, I have one other stock of black bees which began the season well, but now appears weak; I conclude it has a queen as drones appear; pollen also is carried in. I have had it about four years, and it has always given me satisfaction in the shape of a good-sized super every year. It has not swarmed since I had it, and I do not know its age. It is in a Neighbour's hive with three windows. It had a good stock of food, some cells are still sealed up containing honey, and everything about it looks clean, and no dead bees on the ground in any quantity; it appears on friendly terms with its neighbour the strong hybrid stock before mentioned.

What a pity it is that our French friends will not study the economy of a hive of bees, and apply it to their own sad state just now, and why will they not accept one of the two or three pieces of "brood comb" offered them?

Any information and assistance in these two dilemmas will be most gratefully received (more especially if it come in your next impression) by—C. A. J.

[Some people in trying to avoid an apparent difficulty plunge into a course of action which must involve them in undoubtedly real difficulty. As you appear to be so very unpractised an operator, and timid withal, we should advise you to allow your hive to send off a natural swarm. We have little doubt that you would thus propagate, as you desire, from your hybrid queen much more effectually than by attempting to do so by artificial swarming. But if you still must carry out the latter plan, having snugly ensconced your head and neck in a bee-dress, donned your bee-gloves, and securely tied round your coat sleeves at the wrist, and your trousers at the ankles, take a roll of linen rags tied to a short stick, and having succeeded in causing it to smoulder and smoke, start the cover of your hive, and pushing it a little on one side blow in some of the smoke, then lift the cover a bit at one end and send in some more, thus driving the bees down among the combs. Then, with a properly curved honey knife, separate the combs between the frames and the box, loosen three or four of the frames, shift them a little towards the centre until you can remove one of the outer frames, the rest can then be easily taken out one by one. You may require to use the smoke occasionally during these proceedings. You can then follow any course of procedure you please. You will find the details given in the reply to a previous correspondent applicable to your own requirements.

With regard to your stock in the Neighbour's hive, the weakness may arise from various causes. The queen may be almost worn out from age; the combs may be so clogged with honey as to cramp the queen's powers of breeding; or the hive may be affected with chronic foul brood, which we know to have been prevalent in the apiary of a neighbour of yours. The first of those named seems to us to be the most probable cause of your hive's present condition. We should recommend you to drive the bees into an empty hive, cut out the combs, and, if not affected with the foul brood, fix them into frames. You will then be enabled to ascertain better what is the matter, and if the queen appears to be old and worn out she can be destroyed, and proper means adopted of supplying her place either from your hybrid stock or from some other source. If the non-prosperity should arise from too limited space for a prolific queen, some of the combs can be abstracted and the bees induced to build fresh ones. If, on the other hand, foul brood in any form should be the cause of the mischief destroy the hive

and bees at once and for ever. Drone-brood is easily distinguished from worker-brood by its being in much larger-sized cells, that sealed having a more convex and projecting surface.—Eds.]

OUR LETTER BOX.

Marking Fowls (*A. A.*).—The best plan is to sew a piece of list round the leg. If it is a feathered breed then sew the list so that it shall hold without being tight enough to destroy the feather. This will be accomplished if the upper edge of the cloth be put beneath a stout feather, and the lower sewn a little more tightly than the top. The material is so soft and pliable that it does not injure a feather. If it be a good broad strip it will do no injury. It need not be tight. It will not slip over the foot, it cannot pass over the body. The advantage of this system is, that if five or six broods run together, they may always be distinguished by the colour of the worsted round their legs. When it is no trouble to catch the fowls, they may be marked in a different manner, equally efficacious but not visible. Burn them through the web of the wing with a red hot knitting needle, mark the different broods thus:—. .. .. ∴ ⁙ : ⁘, and so on. It cannot be obliterated, and need be known only to yourself.

Chickens Dead in the Shell (*Sutton*).—Your question occurs and is answered every week. The eggs are too dry. It is for that reason the chickens die in the shell. The inner membrane of the egg becomes in colour and substance like gutta percha, and the chick, unable to force its way through, dies in its hopeless prison. The eggs should be moistened daily for ten days before they are hatched, you will then have no trouble. All birds following the course of nature, leave the nest at early dawn in search of food; they find it in meadows and corn fields; in search of it they wander over the wet grass or corn, every leaf is laden with moisture, which communicates itself to the breast of the hen, and in that state she returns to her eggs. Copying nature, many people moisten the breast feathers of the sitting hen when they return her to her eggs. By one of these or by some other means, eggs to be successfully hatched must be thoroughly and frequently wetted.

Eggs Covered with Exudation (*H. K.*).—Our impression would have been that one egg had been broken, but you say there were but nine, and there are nine. Such being the case, there is no doubt exudation takes place from one of the eggs. If the hen was fastened closely down by bars on the nest, it is quite possible she may have sustained an injury that would cause the appearances.

Eggs Small and Yolkless (*M. V.*).—Such a state of things as you describe can only exist where fowls are very much out of condition. This may be brought about by confinement, or by improper feeding. All your eggs are abortive, and the secretions are at fault; thus, one egg is too small and has no yolk, another is soft-shelled, mis-shapen, and has a large yolk. If you had described your treatment, it would have been easier for us to try for a remedy. Your result will prove you wrong. We will tell you what those do who are right. Whether fowls are at liberty or not, they must have access to lime in some shape for the formation of the egg-shell; nothing is so useful for this purpose as bricklayers' rubbish, old ceilings, brickbats, &c. Road grit or scrapings are excellent placed in heaps; let the fowls level them, and then you have them thrown up again. If they are in confinement give them some sods of growing grass, and some fresh-pulled lettuces. Feed on ground oats or barleymeal slaked with water in the morning, with maize or barley, table and kitchen scraps at mid-day, and with ground food again in the evening. It will be a good thing if you give every bird a tablespoonful of castor oil twice at twenty-four hours' interval. If necessary you may follow it with Baily's pills. We have no doubt this treatment will put things right.

Time Guinea Fowls Sit (*M. E. M. K.*).—The hatching occupies from twenty-eight to thirty days.

Pigeons in a Garden (*X. Y. Z.*).—They will do no harm to your garden, for if once or twice scared from it they will be long before they again visit it.

Glasgow Pouters and Cure for Wind Disease (*C. G. M.*).—The very valuable articles on Pouters, by Mr. Huie, of Glasgow, and other Scotch breeders, are in our fourteenth volume—that from January to July, 1868. There are many of them, so we cannot specify numbers. As to wing disease, we recently had in our own loft a very delicate Scotch Fantail with the wing greatly swollen, and even black with inflammation; towards the quills there was a quantity of yellow matter, and the bird was a perfect cripple. We drew all the flight feathers and let out the thin matter near the quills. Gradually the inflammation subsided, and by the time the feathers had grown the bird was perfectly well, and now flies with the rest, and equally easily.

Canary Become Blind (*G. H. F.*).—Blindness will be no drawback to the bird as a songster; the probability is that it will sing more strongly than before. We sometimes hear of the barbarous practice of depriving a bird of sight by scaring the eye with a hot iron, which is supposed by some to have the effect of making it a more finished songster. We know of nothing which will cure it. It will have no difficulty in finding its seed and water.

Rats (*E. L. H.*).—Have them ferreted, and after killing as many as you can, pour a little coal tar into their holes.

Dead Larvæ Brought out of Hive (*A Cottager*).—Your bees bringing out dead larvæ, shows that some of the young grubs have been chilled in the cells owing to the sharp nights we have had, and that the bees are adopting this means of getting rid of a nuisance.

Bees Dying (*Mousley*).—We do not know whether you mean the original stock or swarm, as the one in which the bees are dying. We do not think there is anything at all strange in the fact of half a dozen bees dying every day. At this season of the year, in the natural course of things, mortality is very rapid. If you mean the stock hive, you may put on a cap immediately after swarming; if the swarm, about a fortnight afterwards if the season and district are good.

Super on Hive in Winter, &c. (*G. C.*).—You had better leave your super on the hive until the young bees are hatched out, then if the queen in the meantime has descended to her proper quarters, the cells will be most probably filled with honey. Of course, your super is to a great extent spoiled, but there may be some good honeycomb which may not have been bred in. In our own practice we often have adopted the following plan:—As soon as we first discover the presence of brood in the super, we remove and turn it up, and with a curved honey-knife cut away all the parts so affected. The super is then returned to the stock, the bees of which generally repair and fill with honey the fractured combs, which are seldom re-occupied by the queen, who, if not in the lower hive at the time of the operation, usually quickly retires there on the super being replaced. We always endeavour, if possible, to utilise the brood comb thus cut out by fixing it in frames, and giving it to some young swarm or backward stock. You surely do not expect bees to work in supers without clustering in them. "Langstroth on the Honey Bee" may suit you. It can be ordered through any bookseller. Write to Mr W. J. Pettitt, Dover, who makes hives on the principle you require.

METEOROLOGICAL OBSERVATIONS,

Camden Square, London.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude 111 feet.

Date. 1871. May.	9 A.M. Barometer at 32° and Sea Level.	9 A.M. Hygrometer. Dry.	9 A.M. Hygrometer. Wet.	9 A.M. Direction of Wind.	9 A.M. Temp. of Soil at 1 ft.	In the Day. Shade Temperature. Max.	In the Day. Shade Temperature. Min.	In the Day. Radiation Temperature. In sun.	In the Day. Radiation Temperature. On grass	Rain.
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
We. 24	29.934	67.5	58.8	E.	55.2	78.5	45.1	118.2	41.8	—
Th. 25	29.818	63.0	58.8	S.E.	57.2	79.0	55.3	124.0	51.2	0.140
Fri. 26	29.964	58.7	53.8	S.W.	57.8	66.8	50.8	122.0	52.2	0.010
Sat. 27	30.008	58.6	52.5	N.	56.8	65.4	41.3	117.0	40.8	0.140
Sun. 28	30.103	54.0	52.6	N.E.	55.4	74.0	49.0	115.5	50.0	—
Mo. 29	30.260	57.7	54.6	N.	55.7	71.2	47.3	116.2	45.8	—
Tu. 30	30.228	59.7	56.8	N.E.	57.0	73.8	42.0	120.0	42.2	—
Means	30.045	60.7	55.4		56.4	73.4	47.3	119.0	46.3	0.290

REMARKS.

24th.—A lovely day throughout, only rather too warm, though there was a cool breeze.

25th.—Fine morning, close at noon, and looking storm-like; a few very large drops of rain at 4.30 P.M., showery till 7 P.M., then fine.

26th.—Fine till 6.40 P.M, when it clouded over for a short time, then cleared off with a magnificent rainbow, though no rain fell here.

27th.—Fine morning, slight shower about 11 A.M., thunderstorm from 1.42 to 3.20, showery the remainder of the day, and much cooler.

28th.—Rather dull and cold in the morning, warmer and very fine from noon to night.

29th.—Very fine all day.

30th.—Much warmer, but though very fine, not oppressive till the evening. Barometer falling till midnight.

Fine warm week, air frequently very dry.—G. J. Symons.

COVENT GARDEN MARKET.—May 31.

A moderate supply and steady demand for most descriptions of fruit and vegetables, hothouse produce now being ample for all requirements. Continental goods have been coming in very irregularly lately, but we hope soon to find the transit working better. Kent Peas and Ashleaf Potatoes are now excellent, old ones quite at a discount.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples ..... ½ sieve	2	0	to 5	0	Mulberries ..... lb.	0	0	to 0	0
Apricots ..... doz.	2	0	3	0	Nectarines ..... doz.	10	0	20	0
Cherries ..... lb.	1	0	3	0	Oranges ..... ℔ 100	6	0	10	0
Chestnuts ..... bushel	0	0	0	0	Peaches ..... doz.	12	0	24	0
Currants ..... ½ sieve	0	0	0	0	Pears, kitchen ..... doz.	0	0	0	0
Black ..... do.	0	0	0	0	dessert ..... doz.	0	0	0	0
Figs ..... doz.	6	0	12	0	Pine Apples ..... lb.	6	0	10	0
Filberts ..... lb.	0	0	2	0	Plums ..... ½ sieve	0	0	0	0
Cobs ..... lb.	2	0	2	6	Quinces ..... doz.	0	0	0	0
Gooseberries ..... quart	0	6	0	8	Raspberries ..... lb.	0	0	0	0
Grapes, Hothouse .... lb.	6	0	12	0	Strawberries ..... lb.	6	0	10	0
Lemons ..... ℔ 100	6	0	10	0	Walnuts ..... bushel	10	0	16	0
Melons ..... each	6	0	12	0	ditto ..... ℔ 100	1	0	2	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes ..... doz.	4	0	to 6	0	Leeks ..... bunch	0	4	to 0	6
Asparagus ..... ℔ 100	4	0	8	0	Lettuce ..... doz.	0	6	1	0
Beans, Kidney .... ℔ 100	2	0	3	0	Mushrooms ..... pottle	1	0	2	6
Broad ..... bushel	0	0	0	0	Mustard & Cress .. punnet	0	2	0	0
Beet, Red ..... doz.	2	0	3	0	Onions ..... bushel	7	6	10	0
Broccoli ..... bundle	0	9	1	6	pickling ..... quart	0	0	0	0
Brussels Sprouts .. ½ sieve	0	0	0	0	Parsley ..... sieve	3	0	5	0
Cabbages ..... doz.	1	0	2	0	Parsnips ..... doz.	0	9	1	0
Capsicums ..... ℔ 100	0	0	0	0	Peas ..... quart	2	0	4	0
Carrots ..... bunch	0	3	1	0	Potatoes ..... bushel	2	0	4	0
Cauliflower ..... doz.	6	0	10	0	Kidney ..... do.	3	0	4	0
Celery ..... bundle	1	6	2	0	Radishes .. doz. bunches	0	6	1	0
Coleworts .. doz. bunches	3	0	6	0	Rhubarb ..... bundle	0	4	0	0
Cucumbers ..... each	0	6	1	6	Savoys ..... doz.	0	0	3	0
pickling ..... doz.	0	0	0	0	Sea-kale ..... basket	0	0	0	0
Endive ..... doz.	2	0	0	0	Shallots ..... lb.	0	6	0	9
Fennel ..... bunch	0	3	0	0	Spinach ..... bushel	2	6	0	0
Garlic ..... lb.	0	3	0	0	Tomatoes ..... doz.	4	0	6	0
Herbs ..... bunch	0	3	0	0	Turnips ..... bunch	0	9	1	6
Horseradish .... bundle	3	0	5	0	Vegetable Marrows .. doz.	0	0	0	0

POULTRY MARKET.—May 31.

There are not wanting indications that the supply of young poultry is increasing, and that prices will consequently fall.

	s.	d.	s.	d.		s.	d.	s.	d.
Large Fowls	5	6	to 6	0	Pigeons	0	9	to 0	10
Smaller ditto	4	6	5	0	Rabbits	1	4	1	5
Chickens	3	0	3	6	Wild ditto	0	9	0	10
Ducklings	2	0	2	3	Hares	0	0	0	0
Goslings	6	0	6	6	Guinea Fowl	0	0	0	0
Pheasants	0	0	0	0	Grouse	0	0	0	0

WEEKLY CALENDAR.

Day of Month	Day of Week.	JUNE 8—14, 1871.	Average Temperature near London. Day.	Night.	Mean.	Rain in 43 years. Days.	Sun Rises. m. h.	Sun Sets. m. h.	Moon Rises. m. h.	Moon Sets. m. h.	Moon's Age. Days.	Clock after Sun. m. s.	Day of Year.
8	Th	Meeting of Royal Society, 4 P.M.	70.6	46.4	58.5	15	47 af 3	11 af 8	19 af 0	26 af 9	20	1 22	159
9	F		70.8	47.2	59.0	20	46 3	11 8	46 0	43 10	21	1 10	160
10	S		69.6	46.9	58.3	19	46 3	12 8	5 1	57 11	☾	0 59	161
11	Sun	1 Sunday after Trinity.	72.1	47.6	59.9	13	45 3	13 8	22 1	after.	23	0 47	162
12	M	Meeting of Royal Geographical Society,	71.4	46.1	58.8	21	45 3	14 8	39 1	18 2	24	0 35	163
13	Tu	[8.30 P.M.	71.9	47.4	59.6	20	45 3	15 8	56 1	26 3	25	0 23	164
14	W	Royal Botanic Society's Show opens.	72.6	47.9	60.3	19	45 3	16 8	12 2	34 4	26	0 10	165

From observations taken near London during forty-three years, the average day temperature of the week is 71.3°, and its night temperature 47.1°. The greatest heat was 90°, on the 13th and 14th, 1842; and the lowest cold 30°, on the 11th, 1865. The greatest fall of rain was 1.48 inch.

THE CULTURE OF VEGETABLES IN POOR SOILS.

IN the excellent remarks of Mr. Fish, under the familiar heading of "Doings of the Last Week," I have been pleased to see such prominence given to work in the Kitchen Garden, every process of cultivation being detailed with such painstaking minuteness as to render it easy to understand and to apply these useful lessons. I once heard it remarked that "no glass, no gardeners," seemed now to be the motto of young men, whose sole aim was to work altogether in the glass houses or among the flowers; vegetable-growing being frequently spoken of as "a thing anyone can do." Nor can it be disputed that in a rich soil and with a fair average season no great skill is necessary to produce fine crops of vegetables; yet all those who have to meet the requirements of a family throughout the year, will agree with me that the production of a few excellent crops in favourable seasons is a very different affair from maintaining a steady supply and constant succession of each kind in its season, or as long as it may be required. To overcome the evils of our fickle climate and the ever-changing temperature of spring, which is so frequently a series of trying alternations of bright hot days, frosty nights, cold, cutting, moisture-laden blasts, drought, or blight, demands much more care, forethought, and skill than inexperience would suppose, even when one enjoys all the important advantages of an abundance of rich manure and a good water supply; but when these grand aids to success are wanting, and one has in such a season as that of 1870 to battle with the drought, which fell with such scathing power upon the earth, then is the time of trial calling forth our best efforts, so that no missing dishes or paucity of supply shall be evident, even to that insatiable individual the cook.

Having had some experience of vegetable culture in a poor soil, I purpose offering a few notes on the subject.

When the lengthening day and mild temperature of spring come to us in their regular course, they indicate that the seed time has come for which we began preparing as long ago as the autumn of the preceding year, for then the majority of the crops having been gathered in, every part of the garden not occupied by permanent crops or winter vegetables should be at once taken in hand, the damp spots seen to, drains made, faulty drains repaired, and all the soil trenched at least two spades deep, and thrown up either in ridges or as roughly as possible, so that it may be thoroughly exposed to the ameliorating influence of the frost, air, and rain during the ensuing winter. The action of the frost upon the soil is the most important, and may be described as the changing of the moisture of the soil into ice, which expands so forcibly as to completely shatter the soil, separating it on thawing into so many particles that the air is admitted freely among it; it loses all its sodden sourness, becomes changed from a cold inert mass to an open lively soil, and is in the best possible condition for cropping. In a heavy tenacious clayey soil something more than this is required, otherwise it settles down into its former condition so quickly that it becomes hurtful to the growing crops, especially in a wet summer. To remedy this evil, and make the soil more friable and open, a dressing of some such material as burnt earth, ashes, brickdust, or mortar rubbish answers admirably. Some stress is laid upon this autumn cultivation of the soil, for obvious reasons. When the soil of a garden undergoes such excellent and timely culture it lies ready for use, for by its being so pervious to the action of sun and wind one is enabled to take advantage of the favourable opportunity which two or three days of bright sunshine afford in order to sow the seed of early vegetables, and of those kinds requiring all the months of spring and summer to develope their full excellence. Cold damp weather is so frequently the characteristic of our changeable climate during the earlier months of the year that not one fair day should be lost, or we may have cause to regret it throughout the season.

Compare the prospects for success of A, whose soil is well stirred in autumn, and so exposed during winter that it is purified of all its crude sourness, and so thoroughly pulverised that it is ready for the seed at the proper time; and of B, who has suffered his ground to lie through winter a down-trodden inert mass, only digging it over as the time for cropping it approaches, when it is thrown over in wet heavy clods, and as soon as it is slightly dry at the surface in go the seeds, very often to perish as they vegetate. There can be no question as to the superiority of A's practice; in fact, it strikes one as being so patent to the dullest intellect that nothing more need be written to enforce it.

Next in importance to the cultivation of the soil is the application of manure. To produce first-class vegetables one can hardly have too much manure; if enough of it can be had it is, of course, best to apply a liberal dressing, to be well worked in the soil as it is stirred in autumn. By a liberal dressing I mean a layer at least 6 inches thick all over the surface; if it is thicker, so much the better, no matter what may be the nature of the soil. I would only take care, when the trenching is done, not to bury the manure too deeply, but to keep it so near the surface that the roots of the vegetables may feed upon it while the plants are young, and these from growing briskly and with vigour will come quickly into use, and also withstand the attacks of drought and blight to which plants of more weakly growth would quickly succumb. There need be no fear of waste when manure is so applied, for the power of most soils to absorb and retain the salts contained in manures is a well-established fact, the only exception being that of very sandy soil, to which manure is best applied in a liquid state frequently during the growing season. It too frequently happens, however, that the supply of manure falls very short of the requirements of the garden, causing one to resort to all kinds of makeshifts, for it is useless to sit down and bemoan the want of the precious commodity: far better is it to look keenly around, and see that no particle of any matter useful for manure is wasted; every barrowful of lawn-mowings, weeds, or

leaves should either be used at once or go to the annual manure heap. After practising such strict watchfulness and economy in its accumulation, the limited supply is far too small and precious to be thrown broadcast over the land; instead of which one must strive so to concentrate it that the crops may derive the greatest benefit from it. The best way to do this is to prepare beds or trenches 1 foot deep and of various widths, put a layer of 8 inches of manure mixed slightly with the soil in each trench, filling up the remaining space with the garden soil. In these useful beds almost all kinds of vegetables do well. Peas, Beans of all kinds, Spinach, all the Cabbage tribe, Onions, Turnips, Salsafy, Leeks, salading of all kinds—all these and many other crops I have so grown with the best results.

Beet is not usually required very large, but of Carrots and Parsnips fine symmetrical roots are grown by the well-known method of dibbling holes about 1 foot deep, and 3 or 4 inches in diameter at top, and filling them with a mixture composed of equal parts of sifted manure and sand—a by-no-means difficult or heavy undertaking in a well-stirred soil, the fine roots almost invariably produced by this method well repaying one for the extra trouble. Those having the advantage of a rich loamy soil, may smile at such an elaborate process for growing Parsnips and Carrots, but let others having to contend with a poor soil only give this plan a fair trial, and they will be able to produce roots of the highest excellence both in shape and quality. Moreover, such modes of culture embody the truest economy, almost every root being so straight and handsome that no waste is incurred, while on the other hand, how frequently do such crops, when sown in drills in rich soils after the ordinary fashion, yield a very large proportion of forked crooked roots quite unfit for culinary purposes.

Another thing by far too important to be omitted is the free use of liquid manure in vegetable culture, for by its judicious and constant application rich stimulating food is given to the plants as they require it, so that they are sustained in full vigour throughout the growing season, and thus brought to a high degree of excellence. Care should, of course, be taken that it is not given in excess of the plants' requirements.—Edward Luckhurst.

STRAWBERRY CULTURE.

I first prepare a clean piece of ground, and have it trenched two good spits deep, placing plenty of well-decomposed manure at the bottom of the trench, I then give a good top-dressing of manure from an old Cucumber-bed. I always peg the first runners into 60-sized pots, and as soon as they are ready I have them planted in their fruiting-bed. I never allow the plants in my fruiting-beds to have any runners. I never dig between my plants after planting out. I let the beds remain all winter as they are after the fruit is gathered, for I consider the old foliage helps to protect the crowns in severe winters.

In the spring I go over the beds with a knife, cut off the dead foliage, and rake and clean the beds. As I have at that time a heap of manure ready to be put on the beds, I always give a good top-dressing, which answers for all purposes, as it keeps the ground moist and the fruit clean. It also prevents the liquid manure from running away from the beds. I apply liquid manure as soon as the plants show their flower-stalks, and I give a good watering as soon as the fruit begins to swell, and more if needed. I have no more trouble with my beds except in gathering the fruit, and that is often a trouble to a gardener when he is short of hands. My beds at this date (May 28th) promise a profuse crop.

The varieties which I grow are, for early production, Keens' Seedling, Alice Maude, and Sir Harry. Other sorts are—Cockscomb, President, The Lady, Duc de Malakoff, Nimrod, Crimson Queen, British Queen, Dr. Hogg, Sir Joseph Paxton, Sir Charles Napier, Myatt's Eliza, and Myatt's Surprise; but above all the British Queen, Crimson Queen, Nimrod, and Sir C. Napier, are the favourites with me.—J. Rose, *Gardener, Dallinghoe Rectory, Suffolk.*

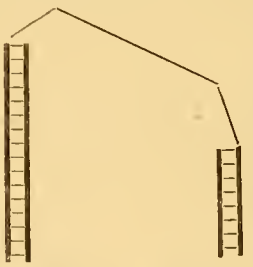
Effects of the Weather.—The past week has been remarkable for cold weather, a strong east wind prevailing. This appears to have blighted most things, and both on Friday and Saturday night there was a severe hoar frost, which, in the month of June and in the height of the bedding-out season, has discoloured many plants. In the kitchen garden it has been necessary to protect Dwarf Kidney Beans and Scarlet Runners with straw, and that too in the middle of the day, as the winds have been so cutting. I do not remember having ever seen the Red Currant trees so much cut up through honeydew and aphis; in some places the foliage is dropping off, and the trees apparently dying. Cherry trees are pretty free from their pest—the black fly, and Rose trees are this season unusually free from both the maggot and fly.—T. Record.

ANOMALIES OF THE PAST WINTER.

Although in my garden, not far from London, the thermometer went down to 4°, and killed even the Purple Sprouting Broccoli, yet I am surprised to find how many plants usually considered more or less tender have passed through the ordeal unharmed in the open border. I would note Linum flavum, Crinum capense, Lilium longiflorum, Michauxia campanuloides, and Calandrinia umbellata. Colletia horrida has survived not only this winter, but the still severer one of 1860. The terminal shoots of Figs, though covered thickly with straw, and this, again, kept dry by a covering of oiled paper, have been killed where not nailed back against a wall. But at Hastings, on the 29th of May, I see in the garden of Miss North, in the Croft, a standard Brown Turkey, fully exposed to the east, with four leaves already expanded, and seven or eight fruits showing on most of the shoots.

Sometime ago one of your correspondents asked for practical testimony as to the use of laying down Broccoli in autumn, heads northwards. It is universally recommended, but I tried it several years, leaving some rows untouched. The latter stood the winter best. The most vulnerable part seems to be just under the leaves, and when the plant is laid down this is more exposed.

At Pevensey, I observed a vinery built in a fashion prevalent at Eastbourne, and which gives some of the advantages of the curvilinear roof in admitting the direct rays of the sun when he is at different altitudes. At the back there is a wall. The roof is slightly hipped so as to allow ventilation on the northern side. The southern lights are fixed, but divided into two portions. The upper two-thirds are at an angle of about 30°, while the lower third has a sharper pitch, probably about 50°. Not having been able to get a side view of the house, I could not well determine the angle. The front wall is about 2 feet high, with large wooden ventilators, through which I saw the hot-water pipes running near it.—G. S.



THE CUCUMBER DISEASE.

For the last seven years I have been troubled with the Cucumber disease in its worst form in a house heated by hot water; in frames on dung beds, and in the open air they are equally affected. I have tried them in all kinds of soil—maiden loam, a mixture of loam and leaf mould, and in peat and charcoal in winter. In the present season I have been more successful; I began to fancy I had found a remedy, as, during April, I cut a number of good sound fruit, but I am sorry to say I shall soon be compelled to destroy the plants, as the fruit are now very much diseased. A friend of mine, who has been a Cucumber-grower for more than twenty years, was troubled with the disease in his plants fourteen or fifteen years ago; it left him, and he has never had a diseased fruit since, and his treatment has varied but little during the whole of his experience. One of your correspondents attributes this disease to a deficiency of water and air in a high temperature, and to too much of the former and not enough of the latter in a low one. Now, I do not wish to contest his having done all he states, but I fear he is as far from the cause and cure as ever, as I have tried all kinds of temperatures, but in vain. My supply is kept up by having a succession of young plants, as I find the first fruits are invariably the best.—J. C. B.

Cattell's Eclipse Broccoli.—We have received well-grown specimens of this from Mr. J. R. Pocock, gardener to N. M. Forbes, Esq., Lilburstone Lodge, Godstone. It stood the frost of last winter better than any other variety. Out of 350 plants

he only lost about twelve. The leaves are fastened together by their points so as to shelter the head. Can any of our readers give information respecting the cause of the adhesion? [The heads of the specimens were 11 inches across.—Eds.]

EARTHING OF POTATOES.

All my men who have Potato ground, and all my neighbours too, to whom I have spoken on the subject, think it of the utmost importance to earth-up Potatoes, but not one of them can explain to me the use of it. All they say is, "Try it, and you will find the difference. You will have a far heavier crop after earthing-up." But not one of them can get beyond the fact, if fact it is. The Why, in spite of all questionings, I can never reach. In the autumn I hope to determine the fact, having some six or eight kinds planted in the field, half of which are treated one way, and half the other. But, prior to experience, I should like to hear what your learned men say on the subject.

I urge, What is the use of heaping dry dust round the stem of the plant—so high that I have sometimes seen the topmost leaf all but buried? They do not, as I have proved, root in this dry dust. Then what can be the advantage of arranging your earth, on a dry soil like ours, so as to shoot the water that falls from heaven as far as possible from the plant? You are fastening an artificial umbrella round its waist. Then the surface earth thrown up round the waist of the plant is taken from the soil between the rows into which the roots are just beginning to make their way. The moist soil is laid bare, and in a soil like ours, where our utmost endeavour should be to save moisture, the young roots are exposed to the sun's rays. The Potato is a very shallow-rooting plant, and this day (June 1st) I saw a light mould board plough, an American affair, carrying in its progress long threads of rootlets and fibre across its neck, and the work was lightly done too. I made the man confess that if earthing was of service, it must be of service, too, to root-prune a plant at midsummer. The roots of Potatoes are so rapid in their growth, that even horse-hoeing must be accomplished as soon as you can see the plants. By the time the top has risen 3, the roots laterally have pushed out 6 inches.

Well, what can be the use of it? I grant it prevents green tubers, but what does that matter? The green ones may be kept for seed. I grant that earthed-up Potatoes are easier to lift, but of what use is it to the plant? as they all aver it is. Is it possible that the tubers swell more freely when sheltered from the heat? Give me the reason, or by facts disprove the fact.—Wyeside.

[Our own experience led us to the conclusion that earthing-up is worse than useless. It did not increase the produce of tubers, and delayed considerably their ripening, so as to expose them longer to liability to the disease. We shall be very pleased by being furnished with well-conducted experiments on comparative earthing-up and non-earthing-up.—Eds.]

STRAWBERRY PROSPECTS.

Mr. Quintin Read states that he has some Strawberries planted last August putting up from ten to twelve trusses. I think he must have made a mistake, or he must be progressing and improving.

I have fifty rows of Strawberries, fifty-six plants in each row, planted last August, which are pronounced by all who have seen them to be very fine, but I dare not say the plants have ten or twelve trusses each. I have another fifty rows which were planted in August, 1869. I shall inform you what are the results in both cases. I have also some rows a year older, which I think promise well. I planted my fifty rows last August on a plot of land which had been cropped with Potatoes, and between the rows of Strawberries I planted Wallflowers, sold these off at 8*d.* per dozen in April, and then dug the ground between the rows. I wish other correspondents would state the number and quality of the plants which they have, and the quantity and quality of the fruit produced, as I intend doing in another letter.—J. M. H.

The Japanese Honeysuckle.—Some years since, conversing with a well-known floriculturist, I asked him whether the Japanese Honeysuckle was ever known to flower in England. He stated, in reply, that he had read of such an event, but thought the cases were extremely rare. It may, I think, interest some of your readers to know that the Japanese Honeysuckle, which grows against the south wall of my house, is now coming into flower. The plant is one of very vigorous growth, having attained, within a comparatively short period, the height of 11 feet, and promising before very long, with the aid of wires, to reach to the top of the house. The flowers at present are confined to those parts of the plant which are in the warmest position, and lie close to the wall; they very much resemble the flowers of the ordinary Honeysuckle, but are smaller, and, like it, give forth a most fragrant scent. I shall be glad to hear if the plant has flowered in other localities.—E. Barbum, *Great Berkhampstead, Herts.*

HARDY VINES ON HARDY STOCKS.

I read in "our Journal" your approval of the above, and send for your inspection a shoot of West's St. Peter's Grape, one of nineteen, all that were left on this Vine, now showing twenty-seven bunches of bloom from nineteen eyes. It was planted out last spring in the common garden soil trenched 2 feet deep, with a small addition of broken bones and dust, 3 feet from a board fence facing the south-west, and has not received any glass protection up to this time. A few mornings ago between 3 and 4 A.M., it snowed freely upon this Vine, and many others. For five generations back my stock has been grown without artificial heat, and the eyes struck in a cold frame in 60-sized pots. This treatment has brought about the robust hardy fruitful habit which my Vines possess. I have Vines that have been grown a short time with great heat, but they are all sorry objects until they have been in my training at least two years, and are not the Vines for the amateur. Golden Champion on its own roots is still the sickly child of my family. I say it should have been sent out at first grafted on the Frankenthal.

I have forty-seven sorts of Vines, in addition to fifteen species and hybrids from North America, with two seedling Grapes between our Grapes and North American species, hardy, vigorous, fruitful, of high quality, yielding in any soil rich fruit at little cost and trouble—in fact, "the amateur's Vines." On these and my stock of hardy Americans I will at some time write a separate article.—R. M. W., *Fir View, Walkley, near Sheffield.*

THE RHODODENDRON SHOWS.

As usual, both at the Royal Horticultural Society's Garden and at the Regent's Park, there are grand exhibitions of Rhododendrons. Those who have not seen such an exhibition can form but a faint idea of its splendour—of the gorgeous effect which these so-called American shows produce. Alas! their glory is but transient; but when summer still lies in the lap of spring—with these north-easters one might say in the lap of winter—anything approaching an out-door display is especially welcome.

Mr. Anthony Waterer, of the Knap Hill Nursery, Woking, holds his show at South Kensington, where he occupies a new tent put up by Mr. Unite, of Paddington, which, though not on the same gigantic scale as regards its height as the tent designed by the late Captain Fowke (the site of which now forms part of the permanent International Exhibition), is from that very circumstance much better adapted for the purpose, inasmuch as it has not the dwarfing effect on the plants which all high structures have. From the fact of the area enclosed being a nearer approach to a square, it is probably but little less extensive than before. The walks and beds are well laid out, sunken here, elevated there, and the general effect is extremely pleasing. Though the Rhododendrons have not, while we write, attained their full beauty, they will doubtless be in perfection by the time this shall have appeared, and as it is they present richly varied masses of colour without the gaudiness and painful impression on the eye of colour unrelieved by nature's green. We have no new varieties to note this year, but old favourites are to be seen in abundance—such sorts as Everestianum, Brayanum, Lady E. Cathcart, and many others are in as great beauty as ever. Of varieties of more recent date, among crimsons may be particularised Caractacus, H. W. Sargent, and Mrs. Milner; Mrs. John Clutton and Purity, white; rose, Lady Armstrong, Stella, Rosabel; rosy purple and purple, Sir Thomas Sebright, and Mrs. G. H. Heneage. In addition to the Rhododendrons are two plants in tubs of the beautiful Cupressus Lawsoniana erecta viridis, one of the most beautiful of all pyramidal Conifers, the branches feathering close into the stem and that without a shade of brownness, withal it is as hardy as the ordinary Cupressus Lawsoniana.

Messrs. John Waterer & Sons, of Bagshot, hold their exhibition at the Royal Botanic Society's Garden, Regent's Park, and it, too, is of great excellence. Alterations have this year been made in the laying-out of the grounds, so as to afford a more complete view of the plants without exposing the boundaries more than is unavoidable.

An eminence at one end of the tent gives a view of nearly the whole of the exhibition without sacrificing the idea of indefinite extent. Among the varieties especially to be noted this year are Loquendum, rose with an orange blotch, fine; Notabile, bright rose, good shape; Victurum, bright rose, very dark spots; Baroness Lionel Rothschild, glowing crimson, remarkably fine; Pantherinum, rosy crimson, spotted in all the petals; Cynthia, rose, very fine truss; Madame Van de Weyer, rosy crimson, very bright; and Lady Emily Peel, purplish rose, very dark spots. It may be useful to note as very late varieties, that Henry Bohn, Lady Falmouth, and Duchess of Cambridge are as yet only in bud.

ROYAL HORTICULTURAL SOCIETY.

JUNE 7TH.

On this occasion the tent was too large for the Show; there was a deficiency of large specimens, and from their absence, notwithstanding the number of subjects exhibited, the tent was not so well furnished as desirable. The severity of the weather (and it is severity when snow falls early on a June morning, even when the wind is dead north), no doubt deterred many from exposing the inmates of their stoves to danger; but still the fact remains that the Show was not so effective as it should have been—in short the tent was too large for the prizes offered. These remarks may appear disparaging—they are not meant in that spirit; the Royal Horticultural Society of late years, as it was in years long ago, has ever been the first in carrying out the real horticultural work of this country; but we speak now of the Show as a show, and not in reference to utility. In that respect it would well hold its own.

Orchids were far from numerous, a circumstance hardly to be wondered at, considering that the exhibition was to be held in a tent, and the coldness of the weather. Mr. Ward, gardener to F. G. Wilkins, Esq., Leyton, sent in the class for nine, Odontoglossum Bluntii with four fine spikes, Oncidium papilio majus, O. ampliatum, O. bifolium in fine condition, O. Lanceanum fine, Odontoglossum citrosmum roseum, Angnloa Clowesii with eleven flowers, Cattleya Mossiæ, and Dendrobium formosum giganteum. From Mr. Bull, Chelsea, came good examples of Odontoglossum Phalænopsis, Saccolabium præmorsum, Aërides, Odontoglossum Uro-Skinneri, and Cypripedium barbatum purpureum. Mr. J. Wheeler, gardener to J. Phillpott, Esq., Stamford Hill, had Oncidium leucochilum with a fine raceme. Mr. Ward was first, Mr. Bull second, Mr. Wheeler third.

In the nurserymen's class for six Mr. Williams was first with Cypripedium candatum with thirteen flowers in beautiful condition, a magnificent example of C. barbatum superbum, Phalænopsis grandiflora, Saccolabium retusum with four remarkably fine racemes, Vanda suavis, and Lælia purpurata. Mr. Bull, who was second, had a good Oncidium Phillipsianum, a very pretty variety of Odontoglossum citrosmum, and O. Alexandræ, good. Mr. R. Parker, Exotic Nursery, Tooting, was third, and had Aërides odoratum blooming very freely, Aërides virens superbum, Vanda suavis, and a good example of the old Phajus Wallichi.

The best single specimen was Cypripedium candatum from Mr. J. Linden, of Brussels, with a score of extraordinarily fine flowers. Second came Mr. B. S. Williams, with one of the finest specimens of Cattleya lobata ever exhibited; and third, Mr. R. Laing, gardener to P. N. Flowers, Esq., Farze Down, Tooting, with a fine Lælia purpurata rather past. A fourth prize was awarded to Mr. Bull for Cypripedium niveum with four flowers.

In the classes for six Stove and Greenhouse Plants, Mr. Ward was first in that for amateurs with a beautifully-grown collection, consisting of his fine specimen Statice profusa, which has been noticed in previous reports, Bougainvillea glabra in charming condition, Clerodendron Balfourianum, Erica Cavendishii, a large Dracophyllum gracile, and Phœnocoma prolifera Barnesii, its rosy everlasting flowers remarkably fresh and bright. The second place was taken by Mr. J. Wheeler with well-grown plants of the four last-named, Stephanotis floribunda, and Aphelexis rosea; Mr. G. Wheeler, gardener to Sir F. Goldsmid, Bart., M.P., Regent's Park, coming in third. In the nurserymen's class equal first prizes were given to Messrs. Jackson and Son, of Kingston, and Mr. E. Morse, of Epsom. The former had a splendid specimen of Phœnocoma prolifera, Erica tricolor dumosa, very large and fine, Stephanotis floribunda, and Aphelexis macrantha purpurea. In Mr. Morse's collection were excellent plants of Clerodendron Balfourianum, the beautiful Dipladenia amabilis, and Bougainvillea glabra covered with its rosy bracts.

Of Fine-foliaged Plants and Ferns several excellent collections were shown. Among the former were very good specimens of Yucca aloifolia variegata, Encephalartos Ghellinckii, Chamærops humilis, Dicksonia antarctica, Zamia Lehmanni, Corypha australis, Rhopala corcovadense, Sabal Blackburniana, Cycas revoluta, Dracæna indivisa, Marantas, Dasylirions, and a very large Beaucarnea stricta from Mr. Kellock. The prizetakers were, for nine—first, Mr. Bull; second, M. Dallière, of Ghent; third, Mr. Taylor, Landerdale House, Highgate. The last-named was first for six, Mr. Kellock, Stamford Hill, being second, and Mr. Tibbles, gardener to A. Haines, Esq., third. Of hardy Ferns, Mr. Chaff, gardener to A. Smee, Esq., Wallington, sent plants in fine health of Struthiopteris germanica, Polypodium dryopteris, Scolopendrium cristato-digitatum, Hymenophyllum tunbridgense, Trichomanes radicans, Athyrium Filix-fœmina Iveryanum, taking first prizes both for twelve and for six. For the former Mr. James was second, and Mr. C. Smith, Manor House, East Acton, third. In the latter class Mr. James was third, and Mr. G. Wheeler fourth. In the nurserymen's class Messrs. Ivery & Son, were first with a beautiful collection, in which Athyrium F.-f. pulchellum, Vernoniæ, and plumosum were conspicuous by their fine, graceful appearance. Messrs. Jackson were second.

Roses in pots, from Mr. Turner, of Slough, were in great beauty, Souvenir d'un Ami, Paul Verdier, Juno, and Marguerite de St. Amand, were especially fine. Messrs. Paul & Son had fine specimens of Charles Lawson and others.

The only exhibitor of six Liliums was Mr. Bull, who had a first prize for Lilium Thunbergianum punctatum, orange red and orange; L. Thunbergianum bicolor, very fine, orange and buff; L. giganteum, white and crimson; L. umbellatum, and L. auratum. These were all well grown and in excellent bloom.

Of the Azaleas the best came from Mr. Woodward, gardener to Mrs. Torr, Ewell, who was first both for six and fifteen.

In cut blooms of Roses, Mr. Turner, Messrs. Paul & Son, and Mr. Soder showed fine examples; and Mr. Parker and Mr. Goddard, Pæonies and Pyrethrums.

The miscellaneous subjects were tolerably numerous, and very interesting, although most of them have been before noticed. Messrs. Veitch had the first prize in this class for a large and fine collection, comprising several fine Orchids, Nepenthes Sedeni, Begonia Sedeni, Crotons, &c., together with cut specimens of Fremontia californica, which, so far as we are aware, they have been the first to exhibit in flower. Mr. Williams, of Holloway, came second, also with a fine collection, in which were a splendid Anthurium Scherzerianum, Uropedium Lindeni, and several other Orchids, together with a number of choice fine-foliaged plants. Mr. Bull was third with Orchids and fine-foliaged plants. In his collection was the singular but not pretty Godwinia gigas.

Mr. C. Noble, of Bagshot, sent, not for competition, a remarkably fine group of Rhododendron The Queen, the plants forming gorgeous masses of bloom. From Messrs. John Waterer & Son, of Bagshot, came several Rhododendrons, of which one named Helen Waterer, vermilion with a rose throat, was very showy, and Baroness Schröder, bright rose, was also very free-flowering. The same firm also contributed boxes of cut blooms of hardy Azaleas and Rhododendrons, likewise specimens of several Retinosporas, of which plumosa and its variety aurea were very handsome. That called variegata was most distinctly tipped with white.

Mr. James, of Isleworth, sent excellent herbaceous Calceolarias, Messrs. F. & A. Smith, of Dulwich, twenty-four Tricolor Pelargoniums. From M. Dallière, of Ghent, came a large collection of Palms and other fine-foliaged plants, Conifers, &c.; from Mr. Mann, of Brentwood, a number of new Zonal Pelargoniums, of which one named Amabilis was of a very brilliant scarlet; and Mr. Little, Twickenham, a nice group of double Pyrethrums. Mr. Parker, Tooting, sent these, Pæonies, and other hardy plants similar to those exhibited in his fine collection at the Regent's Park. Several extra prizes were awarded, which will be found in the prize list given in another column.

Fruit.—Prizes were offered for collections of eight dishes of fruit; but the only exhibitor was Mr. Lynn, gardener to Lord Boston, Hedsor, who had a first prize for a good-sized Queen Pine Apple, excellent Black Prince Grapes, Sweetwater Grapes, Royal Ascot Melon, Royal George Peaches, Violette Hâtive Nectarines, Black Tartarian Cherries, and Dr. Hogg Strawberries.

For three Queen Pine Apples Mr. Ward, gardener to T. N. Miller, Esq., Bishop Stortford, had a first prize for well-grown fruit weighing respectively 4¾ lbs., 4½ lbs., and 4 lbs. 6 ozs. For a single Pine of any variety the first prize went to Mr. R. H. Smith, gardener to H. Walker, Esq., Calderstone, Liverpool, for a heavy Providence well ripened; the second to Mr. Ward, gardener to T. N. Miller, Esq., for a remarkably fine Queen weighing 5 lbs. 14 ozs.; and the third to Mr. Milee, gardener to Lord Carrington, Wycombe Abbey, for a Smooth-leaved Cayenne of 5 lbs.

The best basket of Grapes of not less than 12 lbs. came from Mr. Osborne, Kay's Nursery, Finchley, and consisted of large-herried, beautifully coloured Black Hamburghs. Mr. Bannerman, gardener to Lord Bagot, Blithfield, Rugeley, who was second, had also a very good basket; and the third prize went to Mr. Coleman, gardener to Earl Somers, Eastnor Castle. These, too, were very fine, though not so black as some of the others.

With one exception, that of Royal Ascot, the only Black Grapes shown were Black Hamburgh, and these in all cases were very good. Mr. Bannerman, gardener to Lord Bagot, was first with large beautifully finished bunches; Mr. Douglas, gardener to F. Whitbourn, Esq., Loxford Hall, Ilford, second; and Mr. Coleman third, these being excellent bunches, though not so even in berry nor so well coloured as in the other two prize dishes. Mr. Thomas, gardener to Mr. Wright, Lee, Mr. Baldwin, and others, sent well-grown bunches, but not large, and Messrs. Standish & Co., Ascot, their Royal Ascot, very compact and excellent in colour.

For White Grapes Mr. Douglas was first with large well-ripened bunches of Buckland Sweetwater; Muscat of Alexandria, exceedingly well ripened for this time of year, from Messrs. Standish & Co., came second; third came Mr. G. Sage, gardener to Earl Brownlow, with large bunches of Buckland Sweetwater, but not so ripe as those of Mr. Douglas; and a fourth prize was given to Mr. Osborne, Finchley, for

the same kind. Mr. Jack, gardener to the Duke of Cleveland, Battle Abbey, exhibited Golden Hamburgh; and Mr. Thomas, gardener to Mrs. Drake, Bignell, Bicester, very fine bunches of Muscat of Alexandria, but totally unripe.

Of Melons about a score were shown. The best in the green-fleshed class came from Mr. Burnett, gardener to Mrs. Hope, The Deepdene, Dorking; the second best was Wilson's Hybrid, from Mr. Ward; and the third, a small fruit of Hybrid Cashmere, from Mr. Lynn, Hedsor. Two large fruit of Prince of Wales, a cross between Meredith's Hybrid Cashmere and Heckfield Hybrid, were shown by Mr. Masters, gardener to the Earl of Macclesfield, Sherborne Castle. In scarlet-fleshed, Mr. Masters was first with a large finely-netted kind, apparently Royal Ascot; second, Mr. Lynn, with Gem.

Of Peaches and Nectarines a number of excellent dishes were shown. The best dish of Peaches was Grosse Mignonne, large and finely coloured, from Mr. Brown, gardener to Earl Howe, Gopsall Hall, Atherstone; Noblesse, also fine, from Mr. Harris, gardener to G. A. Ashby, Esq., Naseby Woolleys, was second; and an excellent dish of Royal George from Mr. Miles, gardener to Lord Carrington, third. In Nectarines, Violette Hâtive, large and splendidly coloured, from Mr. Lynn, gardener to Lord Boston, was first; next came Mr. Miles, with fine fruit of Royal George, also highly coloured; and third, Mr. Turner, of Slough, with Hunt's Tawny. The only other kind shown was Elruge.

Of Figs there were only three dishes. The first prize went to excellent Brown Ischia from Mr. Miles; the second to Brown Turkey from Mr. Sage, Ashridge.

In Cherries, Mr. Miles, gardener to Lord Carrington, was first with a splendid dish of Black Tartarian; second, Mr. Lynn, with a fine dish of Elton.

In Strawberries, Mr. Douglas, Loxford Hall, and Mr. Miles, were respectively first and second, the one with British Queen, the other with Sir Charles Napier, both very large and beautifully ripened.

In the miscellaneous class, Mr. Gardiner, gardener to P. Shirley, Esq., Lower Eatington Park, had a second prize for two dishes of Royal George Peach, not large but very well ripened; and a splendid dish of Tomatoes, from Mr. Miles, was third.

Prizes were offered by Messrs. Carter & Co., of High Holborn, for three dishes of early Peas, to include Alpha and Invicta. The first was taken by Mr. G. Brown, gardener to E. Mackenzie, Esq., Fawley Court, Henley, with the two named, and Little Gem, the pods of the latter remarkably well filled; the second prize went to Mr. Garland, gardener to Sir T. D. Acland, Bart., Killerton, for Saugster's No. 1, and the two sorts named.

Fruit Committee.—G. F. Wilson, Esq., in the chair. Mr. Temple, gardener, Markinch, Balbirnie, sent a bunch of Lady Downe's Seedling Grape cut in November last, and the stalk kept in a bottle of water since that time. It was in good preservation, of full flavour, and received the special commendation of the Committee. Mr. Temple further sent examples of Apples grown in the gardens of W. Ballagall, Esq., Fife, in good preservation. Mr. J. Parker, The Gardens, Mount Vernon, Barnsley, sent a dish of Cox's Orange Pippin, the flavour of which was gone. Mr. Gardiner, The Gardens, Lower Eatington Park, Stratford-on-Avon, sent a collection of Apples in very good condition, to which a special certificate was awarded.

Mr. J. Batters, gardener to J. W. Fleming, Esq., Chilworth Manor, sent a dish of Strawberry Dr. Hogg, of fair size and poor flavour.

Mr. R. T. Veitch, nurseryman, Exeter, sent examples of a Fig, stated to be new, which proved to be the true Brunswick.

Mr. Douglas, gardener, Loxford Hall, Ilford, Essex, sent an example of a white-fleshed Melon named Loxford Hall. Mr. G. Skinner, gardener to C. W. Finzel, Esq., Frankfort Hall, Clevedon, sent a seedling Melon from Canada, which proved of poor flavour.

Mr. Cox, gardener, Madresfield Court, Great Malvern, sent examples of a Cabbage Lettuce, called the New Paris Market Lettuce, fine firm close heart.

The Rev. C. C. Ellison, Bracebridge Vicarage, Lincoln, exhibited examples of a Lettuce considered to be new, but which the Committee thought considerably resembled the Red-edged Drumhead. The hearts were very firm and solid, and had stood the winter well.

Messrs. Barr & Sugden sent examples of the following sorts of Parsley:—Light Moss Curled, Hurst's Hybrid Moss Curled, Cattell's Exquisite Curled, Earley's Selected Double, Dark Moss Curled, Tyningham Extra Curled, and Curled.

Mr. Tillery, Welbeck, sent three bunches of Lady Downe's Seedling Grape in very splendid condition, and of good flavour. These had been cut three months, and the ends of the shoots kept in a bottle of water for that time. A special certificate was awarded. Mr. Tillery further exhibited a small bunch of Foster's White Seedling of this season's growth, and a fine dish of Hunt's Tawny Nectarine, Sir C. Napier Strawberries, and May Duke Cherries, for which the Committee awarded a special certificate.

Floral Committee.—Dr. Denny in the chair. Mr. Masters, gardener to the Earl of Macclesfield, received a first-class certificate for Perpetual Clove Miss Joliffe, noticed in a previous report; Mr. Turner, Slough, a second-class certificate for Lady Blanche Pink, a very fine white variety. Mr. Foster, Clewer Manor, had first-class certificates for Pelargoniums Cæsar, Conquest, Lord Byron, Achievement, and Blue Bell; and Mr. William Paul for Lady Dorothy Nevill, Silver Tricolor; Wellington, Nosegay, with large deep crimson scarlet flowers, very fine; Sir C. Napier, scarlet, with flowers quite 2 inches in diameter, and Mont Blanc; a second-class one for Ianthe, magenta tinged scarlet, beautiful in colour.

First-class certificates were given to Mr. J. Linden, of Brussels, for Dracæna lutescens stricta, Acer palmatum crispum, A. palmatum roseum dissectum, Xanthosoma Lindeni, and a second-class for Epidendrum paniculatum. M. Mackoy, of Liège, had similar awards for Lycopodium mandiocanum, L. laxifolium, L. dichotomum, and Tillandsia Morreniana.

Mr. George, gardener to Miss Nicholson, Putney Heath, sent several Pelargoniums, of which Flame, Nosegay scarlet, received a first-class certificate, and Polly King, pale salmon, of good shape, had one of the second class. Double Petunia Pantaloon, very double and extremely showy, one of the numerous varieties raised by Mr. Barron at Chiswick, was awarded a first-class certificate, and a special was given to Chysis aurea flowered in the Society's garden. Mr. W. Thompson, Ipswich, had a second-class certificate for Lathyrus Sibthorpii, a pretty purple-flowered perennial from Greece.

A special certificate was awarded to Messrs. Veitch for specimens of Lælia majalis; and one to Messrs. Jackman, of Woking, for a fine collection of cut blooms of Clematis from the open air. Messrs. Carter & Co. had a second-class certificate for Selanum ciliatum, recently figured in this Journal; Mr. Bull a first-class certificate for Oncidium cryptocepis; Mr. Croucher a similar award for Agave revoluta variegata, slightly tinged with yellowish green over a broad band at the margin, and a special certificate for his collection of Agaves. Mr. Bull sent a number of new plants recently exhibited, Messrs. Cripps cut blooms of Clematis, and Messrs. Barr & Sugden a large collection of blooms of Lilies and Irisee.

The following Ferns from Messrs. Ivery & Son received first-class certificates—viz., Polypodium vulgare Whytei and Polystichum angulare pulchrum Bellairsiæ, Athyrium Filiz-fœmina trifidum, a pretty variety, one of the second-class.

NOTES AND GLEANINGS.

Horticultural Department of the London International Exhibition, 1871.—1. By a Minute of Council, dated April 6th, 1870, the following gentlemen were appointed, with the sanction of Her Majesty's Commissioners for the International Exhibition, to act as Permanent Secretaries of the horticultural section of the London International Exhibition, the management of which is vested in the hands of the Royal Horticultural Society, namely:—Dr. Hogg, F.L.S., for the Fruit Department; Dr. Masters, F.R.S., for the foreign division of the Floral Department; T. Moore, Esq., F.L.S., for the home division of the Floral Department. These gentlemen have been accordingly deputed to carry out all the necessary arrangements, and to conduct all correspondence relating thereto. 2. Foreign horticulturists may enter and exhibit novelties or any other objects of interest at any meetings of the Fruit or Floral Committee. 3. Such foreign horticulturists as may be accredited to represent their respective countries at the London Exhibition, or who may attend in the capacity of distinguished visitors, will be installed *pro tem.* as members of the Scientific Fruit or Floral Committee, and will be invited to join in their deliberations, conforming at the same time to the general regulations of the respective Committees, which require that members should retire while subjects in which they are personally interested are being adjudicated upon. 4. The Secretaries will form, *ex officio*, the nucleus of an international jury for the adjudication of all foreign novelties exhibited in this department; and in order that nothing of importance may be overlooked, or may fail to receive full consideration, they will at each meeting during the season (May to October) invite the assistance of such members (home or foreign) of the Fruit and Floral Committees respectively as may be known to be authorities on the merits of the particular classes of flowers or fruits to be exhibited. 5. The permanent exhibitions will be judged in the manner already indicated, so far as the conditions will admit. They will be examined at the first meeting in each month (May to October), and marks will be recorded at each examination in favour of the meritorious features of each competing exhibition, which marks will be summed up at the end of the season, and the rewards distributed accordingly. In addition to this, a medal may also be awarded to any exhibitor for any specially meritorious display noted during the season. 6. The awards made to novelties shown by foreign exhibitors will consist of the usual certificates (first and second class) granted by the Society for similar subjects. 7. When foreigners exhibit in the classes defined in the Society's schedule, they must conform to the general regulations, but those who compete successfully may, if they desire it, on notification to the Secretary, obtain medals instead of the money prizes. 8. The prizes awarded for the permanent exhibitions, as well as those to foreigners for special exhibitions, *hors de concours*, such as (1) groups of new plants, Orchids, Palms, Apples, Pears, or any similar prominent subjects; (2) miscellaneous or mixed groups of plants, flowers, or fruits; or (3) remarkable individual specimens, will consist of medals. Those who may desire to commute the medals for money or articles of value must notify the same to the respective Secretaries before the close of the season. 9. In forwarding objects for exhibition (especially flowers or perishable fruits), when they are not accompanied by a person in charge, exhibitors are advised to take especial care to forward the bill of lading in due time to the Assistant-Secretary, James Rich-

ards, at the Society's Offices, South Kensington, as in default of the receipt of this document delay has already in some cases taken place in the delivery of perishable objects sent for exhibition. 10. In all other respects, and in so far as they apply, foreigners will be guided by the general regulations of the Society's Exhibitions, as printed in the schedules.

—— Messrs. James Carter & Co. liberally offer upwards of £100 in prizes for Specimen Roots of Mangel, Swedes, Kohl Rabi, Turnip, &c., grown from seed supplied by them, and will be glad to give any further information that may be desired by intending competitors. The roots will be judged on the premises, at 237, High Holborn, by practical farmers, on Friday, November 24th, and the prize roots will be on view at Messrs. Carter's stand in the north gallery at the annual Smithfield Club Show in December.

—— Market Gardening in Cornwall.—Every year the number of acres cultivated in West Cornwall for the supply of the London market is increasing, and now a very large extent of ground is thus devoted. Three trucks of fine Strawberries have been forwarded this week, and during the twelve months ended on the 27th of May last about 3800 tons of Broccoli and above 3000 tons of Potatoes were despatched by rail, principally to the metropolis. In the immediate neighbourhood of Gulval, near Penzance, twenty-five acres are covered by Gooseberry bushes. The cultivation of Strawberries is being very considerably increased.

THE GAYEST OF AMERICAN WILD FLOWERS.

I am going to write an account of the members of the American flora which are famous for beauty and fit for British gardens. At the present time, when herbaceous and alpine plants are fast becoming fashionable, and the ordinary system of bedding is giving up part of the prominent position it held a few years ago, I feel sure that any information regarding the fresh candidates for admiration will be welcome to many. My remarks will all be the result of observations taken amidst the living realities just as these occur in their native haunts. It may take a long time for me to accomplish this undertaking, but if I am spared I shall proceed steadily until my task is finished, and always endeavour to do my work faithfully.

In Kentucky, one of the earliest of the flowers of spring is Claytonia virginica, or Spring-beauty, or Glad-tidings. It may be in England or Scotland, but I never saw it there; and yet it should be grown everywhere, for it is one of the most perfect little gems imaginable. No spot comes amiss to it, and it is the Daisy of this region. Woods, in which the soil is a rich deep loam, furnish all it desires, but it is not in the least afraid to take the open pastures where the soil is as hard as a road, and it is quite plentiful on cultivated ground. Claytonia perfoliata and Claytonia sibirica are common in European gardens, but they have the misfortune to be annuals. This species has the great advantage of being perennial; and the corm which enables it to be so is sometimes buried 2 inches underground. The leaves are linear-lanceolate, and have a good deal of succulency about them. A specimen which is 5 inches above the ground may be considered rather more than the average size. The stem bears at its apex a considerable raceme of flowers, and a little way down are a couple of opposite leaves. The corolla is about as large as that of an ordinary scarlet Pelargonium, and the petals are very neat and spreading, white, or between white and a delicate pink, with a little yellow near the base. The veins of the petals are rose-coloured, and then the blossoms glisten when the sunlight plays upon them. The anthers are of a rich red tint. I cannot describe the charm which this little plant gives to the places in which it abounds.

By the side of the preceding grows Viola cucullata, and it, too, is at its gayest late in March or early in April. This is none of your modest Violets retiring and hiding in the shade, and the sun shines on no brighter or richer blue than that of the corolla of this plant. Out in the meadows, amongst the pure green young leaves of Poa pratensis, this has no peer at this time of year. In my efforts after the application of generalisations, I remember how I used to spoil this lovely plant when I had charge of it at Kew. Along with many more requiring the same sort of treatment as this, I put it beneath the dark shadow of an ugly screen, and indulged in a lot of other foolishnesses, such as putting many little stones about its roots. This last, however, was performed at the bidding of another. I am going to be very candid and tell my mistakes, feeling certain that this is the best way to put others on their guard.

Mertensia virginica.—It is now early in April, and this plant is at the zenith of its beauty. Often, as I wander along through the woods in which it is found, I wish that some of my friends in Britain—any lover of herbaceous plants, like Mr. Niven, of Hull, or Mr. Sutherland—could be with me to enjoy so rich a treat as that which is afforded by a quantity of this in full flower. I have referred to it as a forest plant, but I may add that it stands exposure well. I got ample proof of this the other day. In a little garden in the vicinity of Lexington I saw a bed of it in full bloom, as healthy as could be, and quite open to the sun during the whole day. And this is not by any means a small plant. It rises 2 feet above the ground, and is, therefore, when other things are taken into account, admirably adapted for a mixed border, and would look glorious anywhere. I am not certain that it would care about much shifting—a practice I have heard lauded without stint. The leaves have all the delicacy of tint of Funkia grandiflora, and they are quite as large as those of that plant. The stem, bearing at its summit the raceme of flowers, has foliage all the way up. I feel certain that I cannot do anything like justice to the corolla. It is about 1 inch long, and comparatively narrow for the greater part of its length; it widens towards the mouth, and ultimately becomes a quarter of an inch across, and cup-shaped, whilst throughout it is almost transparent, and of an exquisite blue or pink colour. In conclusion, I believe that this must be a scarce plant in England, and it was not in Kew Gardens in 1870. I need hardly add that, being a native of Kentucky, it is certain to be quite hardy in any part of Great Britain.

When Viola cucullata begins to decline, Viola striata starts to expand its cream-coloured blossoms. The stem of the former species never rises above the ground, but it is otherwise with the stem of this one. Though not so gay, nor yet so capable of producing a large quantity of flowers as the earlier kind already referred to, still it well deserves attention wherever a pleasing variety is maintained by means of well-marked species. In short, no lover of good hardy herbaceous plants can afford to be without this. The same may be said of Viola pubescens, which is produced sparingly hereabouts, and may be known immediately from any other American Viola by its yellow corolla, reminding one of a small form of Viola lutea. The two species now under consideration have not yet been found by me out of woods in which the soil is a rich loam, as deep as you like, and without a stone.

One evening, early in April, I went out on a short botanical excursion, and was rewarded by finding any quantity of Trillium sessile, and a considerable amount of Phlox divaricata, and both in full blossom, and growing in a wood without much shade; although I have observed that the vitality was by far the greatest where protection most abounded, and indeed I have not been able to meet with these plants on cleared lands.

Trillium sessile, like all the members of the curious and beautiful genus to which it belongs, has first three leaves in a whorl, then three sepals, next three pistils, afterwards come six stamens, and finally three carpels forming the pistil. The flowers, the leaves, the sepals, and the petals of this species are all sessile; and hence the trivial name is sound, inasmuch as it is descriptive. The leaves of this, in addition to being sessile, are ovate, and very often marked with large black spots, such as occur on Arum maculatum. The petals grow erect, or nearly so, are lanceolate, about an inch long and of a dark purplish colour, and this last is also true of the inner side of the sepals, the outer side of these being nearly green. The specimens which I saw were never above 7 inches high.

Well deserving of every attention as Trillium sessile is, it is not nearly so lovely a plant as Phlox divaricata. This was a great favourite with me, even when I knew it endeavouring to grow in a pot half full of drainage, and having the soil dried off in the winter time. It is, however, an undeniable fact, that to be admired as it deserves, it should be seen springing freely and faultless from its native soil, and surrounded by, and mixed with, its appropriate associates. What a gem this would make for a rockwork! It should have a nook into which the extremely intense rays of the mid-day sun never go, and it could hardly fail to do admirably if set out in a plantation, and cared for until it took root. It is not a tall plant, as I have not observed any above 1 foot high. It may be known from any other perennial American Phlox by the corolla, the lobes of which are notched at the end, and by the leaves being remote. The corolla is of a pale lilac or bluish purple colour, and about as large as that of the common Texan annual Phlox Drummondi.—John Duncan, *Lexington, Kentucky, U.S.* (in *The Gardener*).

DINNER and PRESENTATION to MR. THOMSON, DALKEITH GARDENS.

On the 31st of May a complimentary dinner was given to Mr. W. Thomson, on the occasion of his leaving Dalkeith Gardens to superintend his extensive vineyards on Tweedside, and a presentation was made to him of two hundred sovereigns, and a handsome service of silver plate, richly chased, and bearing Mr. Thomson's initials. The silver plate bore the following inscription:—

"Presented, along with a purse of two hundred sovereigns, to Wm. Thomson, Esq., on the occasion of his leaving Dalkeith Gardens to superintend his extensive vineyards on Tweedside, by a number of attached friends in Scotland, England, and Ireland, to mark the high regard in which they hold him—on personal, professional, and public grounds; and the warm wishes they entertain for his future success and happiness. May 31, 1871."

The meeting was held in Waterloo Hotel. Mr. Alexander Mitchell, Dalkeith, occupied the chair.

The Chairman, after giving the usual loyal and patriotic toasts, and the healths of the Duke and Duchess of Buccleuch, then said—I come now to the toast of the evening—the health of our esteemed and respected guest. The propriety of the course we are now taking need scarcely be pointed out, for I have met with no one to whom this very course did not suggest itself the moment Mr. Thomson's purpose

of leaving Dalkeith became known. It could not be otherwise. [Applause.] The testimonial about to be presented is the joint contribution of three hundred individuals resident in Scotland, England, and Ireland, and it is but right to say that the value of these contributions has been much enhanced by the friendly and affectionate terms in which, when transmitting them, they have referred to the character and claims of Mr. Thomson. [Applause.] The subscriptions handed to the Treasurers amount to £330; and this amount, partly in gold and partly in silver plate—deducting, of course, the necessary expenses and the gifts for the Misses Thomson—it will be my privilege, before sitting down, to present to Mr. Thomson. The inscription on the testimonial bears that it is presented on personal, professional, and public grounds; and in this combination of claims on the part of our guest consists, undoubtedly, the real significance of the movement and the real value of the gift. I cannot speak with authority of the strictly professional claims of Mr. Thomson, nor can that be necessary in the presence of so many skilful horticulturists. These will be the readiest to acknowledge that Mr. Thomson stands, and has long stood, at the very head of his profession; that he has done incomparably more for gardening in this country than any other man; and that, while he has elevated the social and scientific condition of the gardener, he has, at the same time, by his urbanity and helpfulness, by his recognition of practical merit, and his readiness to promote and reward it, won for himself in a remarkable degree the esteem, confidence, and gratitude of his professional brethren. [Cheers.] An interesting illustration of this occurred a few years ago, when nine of Mr. Thomson's old foremen—then resident at a great distance from him and from each other—joined in presenting him with a handsome and valuable testimonial, expressive of the esteem and gratitude which they continued to cherish towards their former chief. That proceeding, we must all feel, was highly honourable to both parties—to the master, as evincing the genuine kindness of his rule; and to the foremen, for their grateful recollection of his free and improving service. [Applause.] It is gratifying to add that most of the names inscribed on that earlier testimonial occur again in the list of subscribers to the testimonial of the evening—a circumstance which will no doubt enhance its value in the estimation of Mr. Thomson, showing, as it does, that kindly relations once established in Dalkeith Gardens remain unaffected by change of residence and by lapse of time. [Cheers.] It only remains, in a closing sentence, to refer to those public services of our esteemed guest, of which, no less than of his personal and professional merits, these testimonials must be regarded as the recognition. There are few departments of public usefulness in which, during his sixteen-years residence amongst us, Mr. Thomson has not taken a prominent place. In all movements with a view to social or sanitary improvement, to the spread of scientific education, or to the expression of public sentiment on matters of benevolent, loyal, patriotic, or national interest, Mr. Thomson might always be counted on for warm sympathy and important practical service. [Applause.] And hence the alacrity with which the friends who have been associated with him in public labours have united with those related to him only by personal and professional ties in expressing their high esteem for his character, and their grateful sense of the value of his services. [Applause.] Permit me now, Mr. Thomson, in name of the friends present and absent who have contributed to this testimonial, to ask you to accept of the same, and to receive from me, in their name, the assurance of our cordial esteem, our grateful sense of the services you have rendered to the community, and our warm and friendly wishes for your success and happiness in the extensive and important enterprise in which you are about to engage. [Cheers.]

The presentation was made amid great cheering.

Mr. Thomson rose, amid loud cheers, to reply. He said that he had now for a long course of years followed an arduous pursuit—a pursuit requiring great mental and bodily exercise—and he certainly had to-day received an unexpected reward for his labours. He had only had two employers in his lifetime, and he had every reason to believe that he received and retained their confidence. [Applause.] That of itself was sufficient reward for anything he had been able to do. He had received unexampled kindness from gentlemen in various ranks of society; and to be in contact with many of these and associate with them would be a sufficient reward to any man for any extra labour he might take in promoting whatever science he might be connected with. [Applause.] That he had been useful in some degree to the inhabitants of Dalkeith he was ready to admit. He believed that anything he had done in that way had had their Graces' consent, and that, therefore, any thanks were not so much due to him and to anything within himself as to the liberality of those whom it was his honour to serve. [Applause.] As to his connection with horticulture, and especially to the men under him, he believed that they had numbered between two and three hundred; and he was happy to say that, outside of his own family, his greatest pleasure had been in his contact with his men. [Applause.] Of all that number, as far as he could remember, he had not had occasion to dismiss above three or four for any misconduct, and not one of them was ever guilty of a crime that came to his knowledge. Many of them were occupying the first positions in the kingdom in the calling they followed. One of them was with the Queen at Frogmore, another with the Duke of Devonshire; his brother was at Drumlanrig, and Mr. Knight at Floors Castle. He could mention a long list of noblemen to whom he had supplied gardeners; and he believed that in every case they had given satisfaction. [Applause.] If he had accomplished nothing more in a comparatively long and arduous life than the training and bringing into good social position in the calling they followed of so many excellent men, he would have felt that he had not laboured in vain. [Applause.] No man could occupy the position he had so long filled—for nearly thirty-four years now as master—without doing something towards the promotion of horticulture. He had done what lay in his power to advance that noble art; for, after all their flights of fancy and fine philosophies, they must return to the earth for their sustenance. He held that horticulture was the pioneer of all successful cultivation; and the only thing which he regretted in the part of it to which he belonged, was the want of a proper definition as to what a gardener was. Every man who handled a spade or a knife was called a gardener; it would be as well to call every butcher a doctor. [Laughter.] But a man to be a scientific horticulturist required a course of study not very different from that required by the medical profession. In fact, as surgeons, the gardeners were before the medical profession. [Laughter and applause.] For instance, if they met with a tree with a bad head, they cut it off at once, and put on a good one. [Laughter and cheers.] The doctors had not arrived at that yet, and when they did, there would be a great demand for good ones. [Renewed laughter and cheers.] Mr. Thomson made some further remarks expressive of his gratitude for the kindness which had been extended to him, and his pleasure at seeing so many present from a distance to testify their respect for himself. He resumed his seat amid loud cheers.

SOME PREDATORY INSECTS OF OUR GARDENS.—No. 10.

In again entering upon the subject of predatory insects I feel constrained to state, regretfully and respectfully, that I must decline to bestow any commendations on the numerous proprietary compounds which are advertised as being of value for the destruction of the gardener's foes. Some of these, in the form of powders, liquids, &c., may be very good, for anything I know; but as their composition is, generally speaking, a matter of doubt, and as a eulogy of any one of these might look as if I had received "backsheesh" to put in a puff by the way, I shall let them all pass. Those which have really good qualities may speak for themselves in the words of one of the Homeric heroes as translated by Pope, and say,

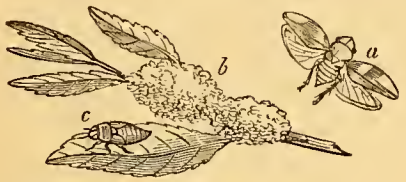
> "Praise from a friend and censure from a foe
> Are lost on hearers who our merits know."

One other remark in passing to the insects I wish to comment upon in this paper. I was reminded recently by a friend's query that there is a misapprehension prevalent amongst some persons, to the effect that grasshoppers are very injurious to gardens, should they be abundant there. In the first place, let it be noted that they are rarely to be found in gardens in any numbers, being more partial to lanes and grassy places. In the second place, when they do occur in the gardener's domain they eat the leaves of trees, but very unfrequently attack flowers, vegetables, or fruits. In fact, the great green grasshopper (A. viridissima), might be rather encouraged as a gardener's friend, for it is now fully believed that this species preys occasionally on smaller insects. No doubt one cause, perhaps the cause, of this supposition is the similarity in form between the grasshoppers and the locust, as ordinarily seen in figures, though almost unknown in actual existence in these islands. Occasionally, too, accounts have appeared, copied from foreign or colonial newspapers, of the ravages committed by what are called grasshoppers, though really they are insects belonging to other orthopterous species; so that, when taking a country stroll in the summer, the horticulturist may listen to the rather monotonous "zic-zic" or "zap-zap" of the grasshopper, a sound which some people rather admire, and not recognise in it the voice of an enemy.

One thing more, however, by way of addendum. Crickets, as even the unscientific perceive, are nearly allied to grasshoppers. Of the mole cricket I have spoken. The field cricket, common enough in the localities whence it takes its name, confines itself chiefly to them, and cannot be deemed a destructive insect; but I have strong suspicions that, at least in the vicinity of London, the house cricket in spring and summer, like its companion the cockroach, takes occasional excursions into gardens. Having, some years ago, to pass on several evenings through market gardens, or at least along a lane intersecting these, I heard with some surprise the loud-toned chirp of the house cricket. Owing to the dusky light my eyes could not verify the report of my ears, but as it was not in the least likely that the field cricket occurred there, it must have been the domestic species, and it had probably journeyed thither from some houses which flanked one side of the garden

ground. A hint, therefore, may suggest itself to market gardeners. If you let off part of your land for building purposes, beware of the crickets and cockroaches which the tenants may introduce into the neighbourhood.

At last I arrive at the insect I have in view—literally so; at least, I had it in view the other day nearer than I wished, when, stooping down in my garden, an individual and his fluid habitation were jerked from a twig upon my eye, and for a time prevented me from seeing anything else. The Cuckoo-spit (*Cercopis spumaria*) is a familiar species to us in the gar-



Cercopis spumaria.
a, Perfect insect magnified; *b*, froth; *c*, larva.

den and in the open country throughout May and June, when it is seen in its larval condition. Little, if any notice, as far as I know, is taken of it in books which treat of the insects troublesome to the gardener, and yet it is certainly a nuisance, for it attaches itself to shrubs, to the produce of the kitchen garden, and to flowering plants, diligently extracting the sap, but also makes itself unpleasant by transferring its frothy

Cercopis spumaria magnified.

envelopment to our person or clothes as already observed. We, of an entomological turn, make acquaintance with the Cuckoo-spit more frequently than we could wish in our hunts after other insects, and should we be engaged at this time of the year in sweeping the herbage to obtain beetles or caterpillars, we are sure to find our nets adorned with numerous Cuckoo-spits which have been dislodged from their leafy dwelling-places; in fact, a friend suggests that if the insect is still to bear the appellation of the "bird of spring," it should henceforth be called, not "Cuckoo-spit," but "Cuckoo-spite," as a decided annoyance to the commonweal generally. But why was it named after the cuckoo at all? Only, perhaps, because it shows itself about at the same season of the year when the bird's well-known cry is to be heard. What other connection there may be between the two it is not easy to say. It is also called the Frog-hopper, according to some authors—not so inaptly, perhaps, as the perfect insect has considerable powers of leaping. Kirby and Spence, however, call it, not the Frog-hopper, but the Frog-spittle, and this name, too, might have arisen from the frothy investiture of the larva being often abundant on grass, and, therefore, in the vulgar mind perhaps attributable to frogs, though how these leapers, agile as they are, could convey saliva to shrubs and tall plants on which we find the insect at times, is not easy to say. Though most noticeable in the early summer, the Cuckoo-spit may likewise be observed in its adult condition, when it also attacks the juices of plants. On the Begonia, and species of similar characteristics, Cuckoo-spits will sometimes congregate in September, and ejecting, like the larva, part of the moisture in the form of small drops, not as a frothy exudation.

This insect belongs to the Hemipterous order, though sometimes taken for a beetle by the unscientific, and is therefore a relative of that well-known pest the aphis, or "fly" of various species. Both the females and males of the Cuckoo-spit or Frog-hopper have leaping propensities; the latter especially distinguish themselves, passing through the air sometimes for several feet. But it is the economy of the larva which is the most interesting part of its history, and in that stage of its existence we find the species most troublesome. De Geir thinks that the froth in which it is concealed serves chiefly to protect it from the intense heat of the sun. Kirby and others point out that it serves also to screen the Cuckoo-spit from carnivorous insects and birds. In spite of this froth the wasp, says Kirby, will pounce upon it and carry it off. One thing is evident, that the secretion is needful for the life of the larva, for when removed from it and deprived of the means of producing more, the Cuckoo-spit speedily collapses and dies. De Geir, by close investigation, discovered that this seeming saliva is, first of all, drawn from the sap of the leaf or stalk on which the creature rests, and then exuded from the abdomen in the form of a number of minute bubbles, each of which contains air, which is prevented from escaping by the adhesive nature of the liquid. By working the abdomen up and down the insect drives these bubbles in the direction it wishes them to be, usually contriving that most of them shall surround the front segments of its body. The trunk or proboscis, by which the larva obtains its nourishment and its protection, is so constructed as to be an air-tight tube, through which the sap is pumped up. The point is sharp, but on each side is an additional cutting instrument, which is serrated, and assists the action of the trunk. One observer, who examined a number under the microscope, reports that a few (about one in ten) have a double set of these lancets, and an extra coil of muscles in the head. When full-grown the Cuckoo-spit larva prepares a sort of cell, in which it becomes a pupa. An outer film is formed of a part of the froth, which is suffered to dry, and the interior is so disposed as to form a resting place for the larva. The state of pupation does not last very long. It is fortunate that this species does not seem inclined to multiply considerably in our gardens, for no very ready remedy or means of checking it suggests itself. The removal of the feeding larvæ would be a tedious and disagreeable job, and the capture of the adult "hoppers" is not easy, owing to their springiness, already alluded to.

The Asparagus season has now commenced, and people of almost every grade manage to get a taste, at least, of this delicacy, which usually keeps up its price in the market pretty steadily. The cause of this is, I suppose, in a measure, the attention and time its cultivation requires, but it is also liable to various inroads from molluscous and insect enemies, which in some seasons diminish the crop. Snails and slugs do much mischief at certain periods, and in some places the Asparagus beetle (*Crioceris Asparagi*) gives the gardener some trouble. The beetle is found during the summer months, being busy depositing eggs upon the stalks, and one entomologist insinuates that Asparagus-eaters who patronise this vegetable towards the end of the season, help to reduce the numbers of this insect, because they devour the eggs with the heads on which they are deposited. By preference, it is said, the larvæ feed on the young plants, adhering thereto very firmly by a sort of sucker at the extremity of the body. These are of a dull brown hue and shining, having the head small. I cannot boast of any personal acquaintance with this species, but suspect that the statement made by some writers, that the larval state only lasts ten days, can hardly be correct. It appears, however, to be the fact, that both larvæ and perfect insects may be found upon the plants at the same time. The pupa condition takes place in the ground. By a careful examination of the surface of the earth at early morning, as soon as any of the beetles have been seen, some of them may be secured ere they mount the Asparagus to deposit their eggs.

Crioceris Asparagi.

An exceedingly troublesome insect in some gardens is that called the St. Mark's Fly (Bibio Marci), though I am hardly sure that a reason can be found why it should be placed under the patronage of any saint in the calendar. The special object of its attack is very frequently the Strawberry, and in some beds, as the larvæ have gregarious tastes, a hundred or more will be found together. But as they prefer undisturbed spots, a horticulturist points out that wherever the one or two-year planting system is pursued, these are less likely to be troublesome than when the beds are left for several seasons. This larva (or grub as it will probably continue to be popularly called), is of a dark brown colour, cylindrical and flattened beneath, with a small and shining head. The mouth is furnished with strong

jaws. It feeds through the winter, becoming a pupa in March, the flies appearing in May or June to deposit their eggs, which usually do not hatch until August. These, singular to say, are frequently deposited in dung, and by means of this introduced unwittingly into gardens, where the larvæ perforate the earth diligently as they increase in size, feeding greedily on the roots. They also infest the flower garden, doing at times considerable damage to beds of Ranunculus. The males and females of the St. Mark's Fly differ considerably from each other in appearance, the females having larger wings and very stout legs.—J. R. S. C.

VALUE OF HONEY BEES IN FRUIT CULTURE.

Honey and wax have ever been two most useful articles in domestic economy, and from the earliest times the honey bee has been the companion of man. What an addition to a farmer's house is a bee hive nestling among the Apple trees with its hundreds of busy inhabitants, some settling about the door, or flying lightly above the roof, others darting off in quest of new supplies of food, and still others returning on labouring wings laden down with their "baskets" filled with crude pollen. What a scene of industry and system is bee life! This is an every-day picture. But honey and wax are not indispensable. The hunting of the sperm whale and the discovery of petroleum have done away with the need of wax, and the Sugar Cane and Beets give sweets in new and convenient forms. What use, then, is the bee? your readers will ask. The answer will occur to but a few. The grand use in nature of the bee is the securing to the farmer or fruit-raiser a good crop and the permanence of the best varieties of fruit.

Gardeners have always known that bees fertilise Squash, Melon, and Cucumber flowers by conveying the pollen from one plant to another, thus insuring not only the complete fertilisation of the seed by the male pollen and thus improving the fruit, but actually causing the production of more Squashes, Melons, and Cucumbers by causing certain flowers to set that would otherwise have dropped to the ground sterile and useless. This has been proved by fertilising the flowers by hand; a very large, indeed an unnaturally abundant crop, being thus obtained. It has been noticed by a few, though the many have not appreciated the fact, that fruit trees are more productive when a swarm of bees is placed among them, for when the bees have been removed by disease or other means the fruit crop has diminished.

On this subject I wrote as follows to a correspondent in the "American Naturalist," a monthly illustrated magazine of natural history, published by the Peabody Academy of Science, at Salem, Massachusetts.

"In answer to the question of J. J. Gonld (Wenham, Mass.), whether bees are in any way injurious to fruit or lessen the quantity or quality, I would reply that all the evidence given by botanists and zoologists, who have specially studied the subject, shows that bees improve the quality and tend to increase the quantity of the fruit. They aid in the fertilisation of the flowers, thus preventing the occurrence of sterile flowers, and by more thoroughly fertilising flowers already perfect, render the production of sound and well-developed fruit more sure.

"Many botanists think if it were not for bees and other insects (such as certain two-winged flies, moths, wasps, &c.), many plants would not fruit at all. The whole subject of the great office of bees and other insects perform in the fertilisation of plants has been fully discussed in the May, July, and October (1867) numbers of the 'American Naturalist,' and by Professor Asa Gray in the 'American Agriculturist,' beginning in May, 1866. 'It is alleged that bees do injury in some way by extracting honey from flowers. What is the use in nature of honey?' The best observers will tell you that it is secreted by the plant for the very purpose of attracting bees to the flower, otherwise it is of no use to the flower or fruit."

This was written before Samuel Wagner printed an article on the same subject in his well-known and useful "American Bee Journal." His testimony so well confirms my statements made above, and is so important to fruit-raisers, that I reproduce it in part:—

"In 1774 Count Anthony, of Torrings, Seefield, in Bavaria, President of the Academy of Science at Munich, striving to re-introduce bee culture on his patrimonial estate, found in this generally prevalent prejudice (*i.e.*, that the bees injure the fruit by their visits to the flowers) the chief obstacle to success. To overcome this, he laboured assiduously to show that bees, far from being injurious, were directly beneficial in the fructification of blossoms—causing the fruit to set, by conveying the fertilising pollen from tree to tree and from flower to flower. He proved, moreover, by official family records, that a century earlier, when bees were kept by every tenant on the estate, fruit was abundant; whereas then, when only some kept bees, and none of those had more than three colonies, fruit was scarcer than ever among the tenantry."

At the Apiarian General Convention, held at Stuttgard, in Wurtemberg, in September, 1858, the subject of honey-yielding crops being under discussion, the celebrated pomologist Professor Lucas, one of the directors of the Hohenhein Institute, alluding to the prejudice, went on to say:—

"Of more importance, however, is the improved management of our fruit trees. Here the interests of the horticulturist and the bee-keeper combine and run parallel. A judicious pruning of our fruit trees will cause them to blossom more freely, and yield honey more plentifully. I would urge attention to this on those particularly who are both fruit-growers and bee-keepers. A careful and observant bee-keeper at Potsdam writes to me that his trees yield decidedly larger crops since he has established an apiary in his orchard, and the annual crop is now more certain and regular than before, though his trees have always received due attention.

"Some years ago, a wealthy lady in Germany established a greenhouse at considerable cost, and stocked it with a great many kinds of choice native and exotic fruit trees, expecting in due time to have renumerating crops. Time passed, and annually there was a superabundance of blossoms, with only very little fruit. Various plans were devised and adopted to bring the trees to bearing, but without success, till it was suggested that the blossoms needed fertilisation, and that by means of bees the needed work could be effected. A hive of busy honey-gatherers was introduced next season; the remedy was effectual, there was no longer any difficulty in producing crops there. The bees distributed the pollen, and the setting of the fruit followed naturally."

From these convincing facts we learn the value of the honey bee to agriculture. Blot them out and we must go almost entirely without fruit and vegetables. Besides being a source of profit for their wax, the bees actually bring to our doors loads of fruit and vegetables and other productions of the farm.—A. S. Packard (*of American Naturalist*).

FLORIDA.

In the way of gardening (St. Augustine, Florida, March 11th), there is not much of interest. The Orange trees suffered more from the cold of last December here than on the St. John's River; this is owing to the effects of the wind from the sea, which frequently amounts to a gale. It requires the protection of walls, screens of evergreens, &c., to ensure success, even in favourable seasons. From what I can learn, the climate in less favourable for the Orange than formerly. Before the great frost of 1835, which killed nearly all the Orange trees in Florida, there was one tree here, as we learn from good authority, which bore as many as twenty thousand Oranges in one crop. This, at the moderate price of 20 dols. per thousand, would amount to 400 dols. The Fig is quite at home here. Some very old trees, perhaps one hundred years old, are to be seen in the gardens. In one place we found five trees of the Black English Mulberry of immense size, fully 5 feet in diameter of trunk, and 75 to 80 feet in height. I have never seen any to equal them, even in Europe.

All species of the Mulberry seem to thrive remarkably well. We see many large trees of the famous Multicaulis. We are told that at one time many persons all over the State embarked in silk-growing, but failed—we suppose because it involved some labour, which people here are averse to.

There is not a garden in ten around the city that has the slightest appearance of vegetation in it. They appear as though they were abandoned, and yet they might be teeming with luxuries as ours are in July.

The Rose blooms here superbly, especially the Tea, Bourbon, and Noisette varieties. The garden of Dr. Oliver Bronson, which contains a large and fine collection, is just now a splendid exhibition. A Tea Rose with a stem 4½ inches in diameter and 10 feet high, bearing fully a thousand flowers at one time, is one of the garden curiosities. The beautiful Spiræa Reevesi, double, is in bloom, and appears even fairer, I think, than I have seen it in the north. The Wistaria is also in bloom, and attains great perfection here. I should think it would bloom nearly the whole season. The Oleander attains the dimensions of a tree, and although it suffered much from the December frost (14° or 15° of frost), it is putting out new leaves, and will recover.

The Date Palm is considerably planted and is a noble tree. Some specimens are fully 30 feet high. The Sago Palm stands well; there is an old plant in a garden here with a trunk fully 5 feet high and a foot or more in diameter. The Magnolia grandiflora flourishes, and there are some fine specimens around. The Lagerstrœmia, or Crape Myrtle, is much planted, and we see some very old specimens. The common street tree here, as elsewhere in the south, is the "Pride of China," (Melia Azedarach). The Oak, however, is fast taking its place.

It is a curious fact that the Peach trees were in blossom a month or more ago, and are yet. We were shown a plantation composed of trees from the north, which do not blossom till May. There they stand as if dead all through the winter, with a temperature equal to our summer. Is it not strange? When we first heard this we could not believe it.

None of our northern fruits succeed well. Grapes are said to do very well in soils of sufficient depth and dryness. In the gardens we find only the foreign varieties. I have seen only

ons Apple tree in the place, and it has never borne, and I have not seen a Strawberry plant or any of our small fruits.

For garden vegetables the winter climate is fine. Peas are producing abundantly now. Lettuce is fine; Celery equal to ours in September. Market gardening has made no progress, as there has been no demand at home, and no facilities for shipping. The hotel tables are poorly supplied. Every hotel in a place like this should have its garden. Fresh vegetables are very important in a climate like this.—P. Barry.—(*American Journal.*)

WORK FOR THE WEEK.

KITCHEN GARDEN.

The young *Asparagus* beds will be benefited by a dressing or two of salt applied in wet weather during the period of active growth. *Sea-kale* beds may have the same treatment. Salt on old worn-out soils acts most beneficially as a manure, in addition to its completely destroying slugs, worms, and other vermin, and it assists the growth of *Celery* and all cultivated marine plants considerably. Continue to plant out fresh crops of *Cauliflowers*, *Cabbages*, *Celery*, and *Savoys* in proportion to what the future demand is likely to be. Plant out *Cardoons* raised in pots in trenches similar to those recommended for Celery. Keep sowing at intervals of a fortnight such plants as *Lettuces*, *Radishes*, *Spinach*, &c., lasting but a short time in perfection. Select a cool and rather moist situation for them through the summer months. Hoe between and earth-up *Potatoes*, which at present look healthy. *Peas*, especially the tall-growing kinds, should be stopped when they show bloom; this will not only throw them into bearing earlier, but make them more productive. Treat *Scarlet Runners* the same for similar reasons. Make up the deficiencies in the herb compartment by transplanting *Thyme*, *Sage*, *Savory*, &c., from the seed beds.

FRUIT GARDEN.

Tie to the wall the shoots of Peaches, Apricots, &c., as they advance. Keep down the attacks of aphides by remedies previously pointed out. A constant watch must be maintained for some time, otherwise these pests suddenly reappear after they are considered to be eradicated. Frequently look over Apricots, Pears, and Plums to destroy a maggot, which, curling itself in the leaves, does them and the young fruit much injury. Gooseberries and Currants attacked by the caterpillar should be daily hand-picked, or the branches exposed to the full force of the garden engine; this will dislodge the insects, which should be destroyed with the back of a spade. The earth immediately under the trees should be watered and beaten firm. This will prevent more of the larvæ from rising to attack the shoots. Where the earth is very light a coating of clay or loam of the consistence of mortar should be spread under the trees, and made firm to prevent the escape of the caterpillars from the earth. If these precautions are taken on the first appearance of the insects they are more easily kept from doing mischief.

FLOWER GARDEN.

During the continuance of the present dry weather frequent waterings must be given, not only to the recently planted trees and shrubs, but likewise to the bedding plants, annuals, &c. In watering it will be better to give the soil a good soaking two or three times weekly in preference to a mere sprinkling of the surface daily, which has a tendency to make the surface hard. Mulching where practicable should be adopted, as well as damping the foliage of newly planted subjects every evening. Peg down as they advance those plants required to cover the ground, and loosen the surface of the beds and borders, which should afterwards be neatly raked over. Carnations, Picotees, and herbaceous plants, with the taller-growing bedding plants, should be staked and tied up to prevent injury from high winds. The strength and height of the stakes must be proportionate to the size and height of the plants to be secured. Hollyhocks, Phloxes, Delphiniums, Asters, &c., if not already attended to, should have the shoots thinned out before being tied up, to prevent an appearance of overcrowding, as well as to improve the size of the flowers. When showery weather occurs let the Box edgings be clipped. London Pride, Thrift, Daisies, &c., used for edgings should each year, or once in two years, be taken up, divided, and replanted when the blooming time is over. Roses now require watching to prevent the ravages of the Rose maggot; a daily look-over is the only prevention. Wash with the engine to dislodge the green fly, or syringe gently with water to which a small portion of naptha or ammoniacal salts has been added; water freely, and mulch the surface over the roots. Ranunculuses will now claim the florist's attention, and great care must be taken to properly shade them from heavy rains as well as the direct rays of the sun, the former dashing the surface soil of the beds over the blooms, and the latter seriously affecting the colour, especially of the dark sorts. There is nothing like cake moss (if it may be so termed) for putting between the rows; it prevents the rain from splashing the flowers, and it likewise prevents excessive evaporation, and therefore does away with constant watering, which in hot weather is prejudicial to these plants. True, they like a cool subsoil, and that also should be comparatively solid. We do not admire stirring the soil with a smooth hoe, which injures the plants by breaking the small fibres which lie close to the surface. It may be said that moss will harbour insects. An occasional watering with lime water, just sufficient to wet the moss through, will not only drive these pests away but prove beneficial to the plants. Seedlings may be inured to the sun by letting them have a little very early in the morning. Carefully weed, and as the flowers expand attend to fertilisation.

GREENHOUSE AND CONSERVATORY.

In placing greenhouse plants out of doors a somewhat shady situation, if circumstances permit, should be selected for the purpose, that they may in some measure be protected from the midday sun; at the same time it is no less necessary that the roots should have a similar protection, for nothing can be more injurious to the greater number of plants than exposing the pots in which they grow to the force of a broiling sun, for the least inattention to watering is likely to prove fatal to the plants, more particularly to hardwooded kinds. It matters not whether the plants are in or out of the house; this evil should be prevented. Out of doors they may be plunged in ashes, or have the space between the pots filled with moss, sawdust, &c.; this will prevent the excessive evaporation through the sides of the pots from the soil containing the roots, and will save many plants from being lost during very hot weather. Shading will be necessary now for all descriptions of plant houses, unless the roofs are covered with climbers, and air admitted largely, allowing more or less at night according to the description of plants grown; and the paths, floors, &c., should be kept damp by throwing water repeatedly over them to preserve something like humidity in the atmosphere.

STOVE.

Stove plants should be closely watched, particularly those with large soft leaves, to guard against the red spider, which the present dry weather is encouraging. Syringe frequently to keep them in check, and plants much infested with them should be dusted over with dry sulphur by the sulphurator. Let the sulphur remain on the plants for a day or two, carefully shading them from the sun, and if possible keeping them in a close place; this will generally be found sufficient to kill the red spider, when the plants may be washed with the syringe and placed in their usual situation. Care should likewise be taken with this class of plants in supplying them regularly with water, a deficient supply of which, causing the leaves to become flabby in dry weather, is sure to be taken advantage of by the red spider. Specimen and choice plants nearly done blooming should have the faded blooms picked off, and be well washed with the syringe; they should then be placed in a cool, shady situation to recover themselves before potting, which, as before advised, should on no account take place until a fresh growth has commenced. Achimenes, Gesneras, Gloxinias, &c., as they begin to show for bloom should be removed to more airy quarters, keeping them, however, partially shaded for a time, when afterwards they may be exposed to a larger share of light. Achimenes must be carefully attended to with water while growing.—W. Keane.

DOINGS OF THE LAST WEEK.

A most singular and trying week; now a burning sun, now a storm of wind and rain such as we expect to have in March, and anon a sudden chill, reminding one of November with its frosty mornings. Several mornings during the week our grass plots had their fine-pointed blades loaded with ice-drops. Many plants in the flower garden looked distressed. We have heard of the Coleus planted out before the 14th. If there was as much cold as we had here, we should expect them to be very browned and stunted, if not irretrievably injured. "Wait a little" is often wisdom. We are generally about the last in

furnishing the flower garden, but we would be later still if we had less to do.

KITCHEN GARDEN.

In the kitchen garden nothing has suffered except the Dwarf Kidney Beans we referred to, and they decayed in the ground from want of heat. Potatoes never looked better, and we hope no such June frost will injure them as we recollect once coming on the 20th of the month. Peas in all stages look well, and winter vegetables are strong, but we wish we could only find ground for them. Cabbages will not be much behind after all, the first gatherings proving very good, and the spring-raised ones are coming on well, thanks to several applications of house sewage.

House Sewage.—It would be well if our cottagers and amateurs could thoroughly see, that the most effective mode of administering such liquid is to present it to the roots of growing plants, especially of all the Cabbage tribe. In ordinary weather after June, Cabbages and Cauliflowers will rarely have too much. Of course, it should not be over-strong, but for all such purposes we generally use ours as it runs from the mansion, scullery, pantry, laundry, &c. Soapsuds are a valuable fertiliser. Our transplanted early Peas seemed to be at a standstill; the pods did not advance after forming, and refused to bulge-out as we wanted them to do. A touch-up with the fork and a fair watering at the roots, set them swelling at once. But for scarcity of pure water, we should never for years have found out the value of house sewage. It is best to have it clear, and this can easily be attained by having a good-sized cesspool across the drain which conveys it to the tank or reservoir. All sediment would lodge there and be cleared-out when the cesspool was about half full.

Vigorous growth after all is the best security against the attacks of vermin and insects, either under or above the soil. We have seen many a pailful of rich dish-washings, and many a tubful of suds slushed out to produce offensive exhalations in a hole or ditch, that rightly applied would have soon doubled the size of Cabbages, Lettuces, and Cauliflowers. We are more convinced every day that the most easily-procured fertilisers are still among the best, and we often grieve to find that they are worse than neglected, just because they can be obtained at little or no cost.

Cold as it has been, the previous hot days have made the little *weeds* show in their myriad strength. Taken before they reach half an inch in height, a slight scuffle with a Dutch hoe, and sun and wind, soon send them out of sight. We often wonder what a strange store for seeds every old kitchen garden is. Knock up every weed that shows itself, and only turn the ground over again a few inches in depth, and ere long a fresh green carpet of weeds will show itself. To keep a place, therefore, as respects weeds, with anything like ease, the weeds must be cut up when young, and none should be allowed to seed. Those who encourage winged seeds to mature themselves, as Thistles, Dandelions, Groundsel, &c., ought to be brought under the ban of legal enactments. We never saw more of Thistle down and Dandelions than last summer, and we find that on a part of our lawn a good crop of young Dandelions is coming up. We find that Watson's lawn sand soon blackens the leaves, shrivels them up, and causes them to disappear. A larger dose kills the roots. Fortunately, owing to the dryness of the lawn and ground, the bulk of such winged seeds were wafted away and caught in trees, hedges, &c., to be parched and dried. But it is very different when they light on, and have the choice to twist and get into a damp lawn or loose ground. We once, owing entirely to such lodgment, had nearly half an acre of old lawn covered with young plants of the Sow Thistle, where no such intruders had been seen before for many years. We recollected of some clouds of downy seeds careering past in the previous summer. It is not uncommon to notice fields of corn and Turnips carefully hoed, and yet some neighbouring hedgebanks furnished with enough of winged seeds to spread over some hundreds of fields. The cutting-up of all weeds when young is also of advantage in keeping the surface of the soil open instead of hard and baked. The first condition is always desirable when rapid growth is wanted. When we want a plant to bloom and seed as soon as possible, the reverse conditions may be resorted to. The heavy rains at times tended to harden and consolidate the surface soil.

These rains by softening the ground gave us a good chance for thinning all our earlier Parsnip, Carrot, and Onion crops —the thinning is so much more easily done, and then a good scuffle between the rows leaves all neat. We generally lay the Onion thinnings in a shady place, thickly in rows, we might almost say bundles, and thus they keep nicely, and are useful for many purposes, one of which, if they be allowed to ripen, is yielding small Onions, often much in demand. Carrots if very small are of no use, but even if less than the little finger, if put out thickly in rows in a shady place, with a little fine sandy soil about them, they continue very crisp and sweet for a long time, and come in useful for dish-dressing and soups. Such thinnings give a great relief, and make a small piece of Carrots allowed to grow to their full size, go much further. Now, or about the middle of the month, is a good time to sow a late crop of Carrots. Young Carrots not thicker than one's thumb have a sweetness and richness to which the finest old Carrots can lay no claim. The young ones, too, are rarely spotted with the marks of vermin.

Onions.—Those planted out in spring from a bed sown in September seem as if they would be very good this season. They are rather better than those left unlifted where sown. We have had the latter quite as good as the former when we have taken the trouble to go along the rows, say about April, and move away the earth from the base of the bulb almost as far as to the first layer of roots. We might be in error, but we thought we discovered years ago that one principal cause of gouty "lords and ladies" among spring-sown Onions was sowing the seed too deeply. The chief secret for getting good bulbs from transplanted Onions is to fasten the roots firmly in the ground, but to have the base of the bulb not below but resting on the surface of the ground. When dry weather succeeded planting we have sometimes run a little fine earth close to the plants on each side, partly to keep them upright and partly to prevent moisture escaping so freely; but as soon as the Onions held up their heads and were growing freely, it was always found to be good policy to remove this covering from the bulb. "One who has a right to Grumble" because his transplanted Onions threaten to be nothing but long necks, may find here a hint to suit him. It may turn out to be good policy to expose the base of the plant more.

Earthing-up Potatoes.—This we did to most of ours, not because we think it of importance in general, but because we believe it helps to keep the roots moist in dry seasons such as we have lately had. Our earthed-up Potatoes last season, other circumstances being equal, were by far the best as respects produce and size of tubers.

Seed sowing in dry ground in summer. To make sure of the seedlings, be the seeds those of a Pea or a Turnip, we advise red-leading them before sowing. Then, to avoid all shading and surface-watering, we prefer sowing in drills, watering the drills before sowing, and then covering all over with the dry soil; for very small seeds, using a little riddled soil. The same plan may be followed in bed-sowing, only the bed must be watered all over, and after the seed is sown dry soil should be sprinkled over it; this takes more trouble and labour. The moisture at the seeds causes them to swell and germinate, and the seedlings come up healthy and strong through the dry covering. The dry surface keeps the moisture in, and so far keeps heat in too, as there is none of the cold which is apt to be produced by evaporation from a moist surface. When such a mode is adopted little or no watering is needed afterwards, and the dry surfacing is a better shade than mats or netting.

FRUIT GARDEN.

We have said quite enough about Strawberries of late. Some web caterpillars have appeared on Pear trees, and these were removed at once to prevent their spreading. Some dwarf Cherry trees have had their leaves well holed from the last hail. Our Gooseberries are plentiful where we gave but little or no pruning. Unless we could have protected the buds from birds it would have been of little use to prune them. The honeydew has appeared to a large extent on some Currant trees against walls, but has not shown yet on bush trees in the open garden. A good many little shoots on a few Apple trees where there is plenty of fruit have been blighted and withered up as if a fire-blast had passed over them. A few Pear twigs are similarly affected. In general the crops will be fair.

Could we have found time we would have pinched out the points of spur young shoots before now. This greatly tends to cause fruit buds to cluster at their base. In all bush and pyramidal trees the great point is to have myriads of fruit buds. It is an easier matter to thin out hundreds of fruit than to fix one on where none is to be found. Suitable strength is most easily supplied by surface-dressing. We have come to the conclusion that with shallow surface-planting, summer-nipping and regulating young shoots, and surface-mulching, we may almost dispense with root-pruning—a very nice process with

the experienced, but often perplexing and disappointing to our most enthusiastic amateurs. We went over our orchard-house trees quite late enough. When Peaches and Nectarines set like ropes of Onions, and swell quite enough before we thin, we can hardly help wishing that only from a fifth to a tenth of them had set and swelled, and even then it is a great chance if we do not leave too many. Nothing injures trees more than heavy cropping, and such trees generally take their revenge by withholding the usual return in the following year. Here is a case in point. Last year we had two beautiful dwarf trees of the Red Quarrenden Apple, very useful in its way for a short time. Had we been wise, instead of allowing both to overload themselves with fruit, we ought at least to have thinned one freely, and then that would have had a chance this season, for of little room we must make the most, and this Apple, prettier than good, helps to fill a gap. We shall have very few fruit from both trees this season. They will need this summer to make a number of fresh fruit buds. We think we once gave of one of these trees—a large espalier—an account which we may repeat as interesting to some. When a large tree we raised it and replanted it where its presence would be desirable. With all our care, the labour seemed so far to have gone for nothing, that during the whole of the season after planting it never made a single leaf, though the bark remained fresh and green. The singular thing is, that though in the first season after planting it did not yield a single leaf, in the second season it gave us a good quantity of Apples, as well as a rather free moderate growth of shoots and leaves. We quite expected the growth, but we did not expect the fruit. Every year since we have had a good supply, and we have no doubt we should at least have had the usual amount of blossom, at least this season, if we had taken a more moderate crop last summer.

Peach House.—Probably owing to keeping such a lot of Strawberry plants in pots in the house we have noticed a few Peach leaves affected with red spider, and have therefore fresh daubed the hot-water pipes with sulphur. As the fruit is ripening, the pipes will not be hot enough to do any injury. As lately stated, when Vines are young and sulphur is applied to flues or pipes, great care should be taken that the heating medium is not too hot. It is better to have it under 170° than over it. Of all things that we know Black Hamburgh Grapes when not much larger than Radish seeds, and the young fronds of Maiden-hair Ferns, are the most easily injured by sulphur fumes. One great drawback to keeping Strawberry plants in pots late in forcing houses is, that in dry parching sunny weather the Strawberry plants are more likely to be affected than they are at an earlier period in the spring, when the sun is less powerful and the houses are less heated.

We commenced thinning Grapes at the top of the late vinery, thinning them much more than earlier ones, as they must hang much longer, and we want to reduce to the lowest point the chances of damping. It is very seldom that these late Vines, or in fact any Vines, are wetted or syringed—our water is not clear and good enough to permit of that being done after the Grapes are set and beginning to swell. The watering of plants, and damping the stages and floors, generally furnish enough of atmospheric moisture.

ORNAMENTAL DEPARTMENT.

Filling flower beds has been our chief work, and will be so for at least a week. Some of our first-turned-out plants seem a little shabby from losing their larger leaves, but if the nodes and joints are all right they will soon throw out fresh shoots and leaves. Many would think by the look of them that a little water would help them, but in this very cold weather the water would tend still more to chill the roots.—R. F.

TO CORRESPONDENTS.

*** We request that no one will write privately to any of the correspondents of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By doing so they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely to The Editors of the Journal of Horticulture, &c.*, 171, *Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

Books (*R. Wilson*).—We know nothing about the journal you name.

Gardeners' Examinations (*M. Vivian*).—Write to J. Richards, Esq., Assistant Secretary, Royal Horticultural Society, South Kensington, and ask for the information.

Thujas (*J. T.*).—T. gigantea and Lobbii of the nurseries are identical.

Writing on Zinc Labels (*F. R.*).—We have published a recipe several times, but are told that a saturated solution of sulphate of copper answers very well; and that a few drops of sulphuric acid make it bite in rather better.

Paul's Double Scarlet Thorn (*An Old Subscriber*).—The enclosed specimen seems to be of the old double pink variety. None of them are scarlet, but various shades of crimson.

Who is an Artisan (*Inquirer*).—For prizes at a horticultural show to be competed for by "artisans," no one ought to exhibit except those manually employed as servants in the manufacture of some article, such as carpenters, smiths, tailors, weavers, &c.

Anthurium Scherzerianum (*G. B.*).—It belongs to the natural order Orantiaceæ, and Tetrandria Monogynia of Linnæus. It is named after M. Scherzer, who discovered it in Guatemala. The flowers, though so peculiar in form, are perfect. You may see a portrait of the flower and its parts in the "Botanical Magazine," *t.* 5319.

Summer-pruning Cherries and Plums (*Q. Q.*).—It is necessary to pinch off the points of all shoots of the Cherry and Plum, except those required for extension, which in the case of wall trees should be trained in at their full length. The pinching needed for inducing fruitfulness next year in Pear trees is applicable to the Cherry and Plum.

Geraniums in a Frame (*Idem*).—The Geraniums you have may be grown into nice plants by autumn. They would succeed admirably in a cold frame, placing ashes as a base for the pots and for keeping out worms. You do not say what size of pots they are in, nor whether these are filled with roots, but we presume they are in 3-inch pots. Shift them into 6-inch pots and place them in the cold frame, keeping them rather close and slightly shaded for a few days, but give a little air early in the morning, so as to have the foliage dry before the sun falls powerfully on it. After the plants are rooting freely admit air in abundance; in fact, gradually harden them off and remove the lights, using these only in cases of very heavy rains, and then tilt the lights back and front so as to admit air freely. Take out the points of the shoots about ten days after the potting, and again in the second or third week of July, giving them their blooming pots (8-inch) early in August. They will flower finely in autumn.

Conover's Colossus Asparagus (*Idem*).—We have no experience of this, but hear of its having no extraordinary amount of vigour as compared with the ordinary kind. The transplanting will cause plants so treated to be less vigorous than those allowed to remain where sown. We have colossal Asparagus by affording a deep, rich, well-drained, sandy soil, and giving soakings of sewage in trenches between the rows two or three times a-week from the beginning of June to the middle of September. We have not found from experience two kinds of Asparagus.

Lily of the Valley Seed Germination (*P. R.*).—The seed, like the plants, does not grow speedily if placed in a brisk heat, but it usually germinates in the spring if sown in the open ground as soon as ripe; but if not sown till spring in some instances it does not germinate until the spring following. We would plunge the pot in a shady border, and keep the soil moist. The most suitable soil is a light rich loam, moist but well drained. A border shaded from the direct midday sun is most suitable.

Nemesia Seed Germinating (*Idem*).—They are not difficult of germination, but being small, should not be covered deeply with soil. If they are just covered it is sufficient. In a gentle heat they appear in a few days. Venidium was applied by De Candolle, but has not been explained. Lindley says, "meaning unknown."

Sir Harry Strawberries Unfruitful (*E.*).—Having borne abundantly last year, we should attribute their unfruitfulness this year to that circumstance, combined with the unusual drought of last season. We would not destroy them unless more than three years old, and if we made a fresh plantation we would not take runners from them, but from fruitful plants. The first runners are the best, and the earlier they are planted the better. We have a splendid show of blossom with grand foliage, attributable, we think, to the mulchings last season and the drenchings of water with the hose pipe. Plenty of room, manure, and water are requisite to grow Strawberries.

Vines Breaking Irregularly (*Idem*).—The planting of Vines in September would not affect their breaking in the ensuing spring, but rather tend to a good breaking of the eyes. It is due to cold and a dry atmosphere. Moisture with warmth is necessary for a regular breaking of the eyes.

Grapes Diseased (*M. J. C.*).—They are suffering from the disease called by gardeners "the spot." It is an ulceration caused probably by a deficient supply of sap. Remove the soil down to the first roots, replace it with a compost of two-thirds light soil and one-third decomposed stable manure, and water once a-week with weak, tepid, liquid manure. Have the surface mulched.

Vines out of Doors (*R. M. W.*).—The shoot is very vigorous, and your statement of the number of bunches very remarkable. Let us know if any of them on the varieties you name ripen out of doors.

Vines in Greenhouse with East Aspect (*W. B.*).—Your greenhouse having no sun after noon, owing to a high wall to the west, will grow Vines, nevertheless, very well, but they will need a little fire heat at starting and when ripening, but you may do much by closing or reducing the air shortly after the sun leaves the house. Black Hamburghs would do well, and Foster's White Seedling. We prefer the border partly within and partly outside the house, but do not care for more than a 3-feet border inside, so that the Vines may be planted inside. Four feet apart we consider the most suitable distance to plant Vines in a greenhouse.

Mildew on Vines (*S. D.*).—There is no known means of preventing mildew, except by dusting with flowers of sulphur. In vineries, however, it has been found that painting the hot-water pipes with a composition formed of flowers of sulphur and a solution of 3 ozs. of soft soap to the gallon of water, wards off mildew.

Destroying Snails (*Idem*).—In gardens, the best plan is at dusk and early in the morning to dress the ground and crops with quicklime, particularly after rain. A few dressings will soon clear the garden. Black-

birds, thrushes, and other song birds destroy immense numbers. Amongst pot plants no plan is so good as to search for them after dark with a lantern. Fresh Cabbage leaves put down at night and examined in the morning afford a means of taking a great many.

Cucumbers Damping-off (*D. W.*).—The watering daily is sufficient to account for the fruit not swelling. As soon as the flowers close they become wet, and the fruit do not swell-off, as you say, and we are surprised it does not decay. In dung beds Cucumbers in the brightest weather do not require water oftener than every alternate day, and in ordinary weather partly dull and partly clear, twice a-week, whilst in dull weather once a-week is quite sufficient. The soil should be moist, but it is well to allow it to become dry before giving water, and before the leaves flag afford a good supply. Water less frequently, admit air early in the day, and shut up early in the afternoon, and we think your fruit will swell freely. On dung beds we give no manure, but employ turfy loam alone.

Eradicating Wild Convolvulus (*H. B., Belfast*).—We know of no better plan than to dig them up with a fork by the roots, taking out every portion of the root-stem. This is very tedious, but the only effectual method we have tried. Pulling up the shoots as soon as they appear, and keeping them under throughout the summer, weakens the plant considerably, and prevents any very extensive root-formation; but there is, as already stated, no effectual means of destroying it but forking out every portion of root.

Strawberry for Forcing (*Amateur*).—Of Sir Harry, Dr. Hogg, President, and Rivers's Eliza, we should prefer Sir Harry for one, and if two, President. We should add Sir Joseph Paxton. The growing end of the Vine in the ground vinery you may stop when as long as you wish, and at the winter pruning cut it back to an eye about 15 inches from the end, and the shoot from it may in future be treated the same as the side shoots—that is, it may be cut back to one or two eyes at the winter pruning. All growths subsequent to the first stopping, keep to one joint throughout the season.

Coats of Fungi (*Fungus*).—The fungi sent are the external leathery coats of Scleroderma vulgare, a tough fungus allied to the Puff-balls, which grows on the surface of the soil. These external coats, owing to their corisceous nature, often remain on the ground all through the winter till the following spring. The assumption as to their being the cases of decayed Truffles, &c., is altogether erroneous.

Variegated Periwinkle (*J. E. M.*).—The golden-veined leaves you enclosed are very handsome, and if the plants propagated from their parent retain their variegation it would be an acquisition to the flower garden. There is one much like it known as elegantissima.

Newly-planted Fruit Trees not Thriving (*A Gardener in Trouble*).—We do not see anything in your planting likely to cause the trees to go back, as yours have done. We think, judging from the roots, which are dead, the wood quite dry, and the leaves black, that they will not recover. We would, however, leave them, and cease watering at the root, sprinkling overhead with water in the evenings of hot days. We planted a great many fruit trees this spring, some as late as the middle of March, and out of several hundreds not one has failed. They are now in full leaf. We fear your trees have had the roots frosted, or the roots may have been destroyed by the journey; or, as you had them from a continental source, they might have been damaged by sea water. If they do not recover by August they never will do any good, and you will have no alternative but to replant in autumn.

Calceolarias and Zinnias attacked by Weevils (*Zinnia*).—The Calceolaria sent us is a mere skeleton. We think the damage has been done by some weevil. We advise you to add 1 oz. of white hellebore powder, which may be obtained of any druggist, to a gallon of water, with which sprinkle the plants overhead after dark. Being poison, care is necessary, and the liquid should not be exposed to the air until used. Elder leaves may be placed in an iron vessel or boiler with enough water to just cover them, boiled until quite black, and a gallon of tobacco juice added to every gallon of the elder decoction, and one gallon of water to every gallon of tobacco juice. This, strained and applied after dark on a dry, calm evening with a fine-rosed watering-pot, will destroy or drive away every kind of caterpillar, beetle, or weevil. We also find it an effectual remedy for all kinds of aphis.

Pyrus japonica for a North Wall (*A Five-years Subscriber*).—We have no experience of this on a north aspect, and unless you reside very far south it would, probably, not succeed. We have seen it, however, covering a 24-feet wall with an east aspect, and flowering and fruiting profusely. The flowers are scarlet, and about an inch in diameter. Plants from seeds may flower in three or four years from sowing, and may then be 3 or 4 feet high. The seeds should be sown in rich light soil in a pot or pan in February, covering them about half an inch. Place the pots in a cold frame, keeping the soil moist, and in about six weeks the plants will be up; then admit air freely, and remove them after May to the open ground, keeping them well watered in dry weather. In autumn plant them out about 6 inches apart in good light soil and a warm situation, and twelve months afterwards they may be finally planted against the wall, but we do not say they will succeed against a wall with a north aspect. All the Quinces like warm situations and porous soils free of stagnant water.

Stopping Chrysanthemums (*E. S. C.*).—Do not stop them later than the middle of this month.

Selecting Strawberry Runners (*R. H.*).—It is not unusual, however careful we may be in selecting runners from fruitful plants, for some of the runners not to show fruit, whilst others are remarkably prolific. We often experience this, and find such are not sterile in after-years, but produce abundantly. We fill-up all our gaps as early in May as we can distinguish the fertile from the barren plants, always keeping a few plants of each kind in reserve beds; and lifted with balls and well watered they experience but little check. We, of course, remove the sterile plants and replace them with others that are fruitful. In selecting runners, take them from fruited or fruiting plants. Such only are to be depended on.

Chamærops Fortunei in Wardian Case (*J. D.*).—This Palm will succeed well in a Wardian case not kept very close, and in a room from which frost is excluded. The treatment required throughout the year is simply to keep the soil moist, and to admit air for a few hours early in the day, and to close early in the afternoon. A compost of rather rough peat two parts, one part light turfy loam, and one part of cocos-nut refuse, with a fifth part of silver sand will grow it well. When growing, more water will be required than when it is not, but at all times the soil must be kept moist. The leaves may be advantageously washed with a sponge and water. Liquid manure is not necessary. It is a native of China, and was introduced by Mr. Fortune in 1844. It attains a height of about 20 feet. In a room it would succeed well from August to March inclusive, but in April, May, June, and July would be better in a warm greenhouse so as to make fresh growths, though it would do well in a light airy window. As a decorative plant it is very useful; indeed, Palms generally are the most enduring of all plants for room decoration.

Pruning Banksian Roses (*F. Y.*).—The best time to prune Banksian Roses is in the winter, or late in the autumn. They do not require, or rather we might say stand, much pruning, which should be confined to thinning-out where the shoots are crowded, or removing the weakly growths. Strong shoots should be nailed-in to their full length.

Exhibiting Tea-scented Roses (*E. M.*).—As the Climbing Devoniensis is only a sport from the old Devoniensis, it would be as well not to show them as separate sorts in a stand, as many judges would disqualify them, but much would depend on the individual opinions of the judges. Generally speaking, Noisettes may be shown as Tea-scented Roses, unless there is a special rule to the contrary in the schedule; for instance, we should always class Maréchal Niel and Cloth of Gold among the Tea-scented, although generally classed as Noisettes. In most schedules when prizes are given for Tea-scented Roses, the wording is for Tea-scented *or* Noisette Roses. Having often had to judge classes for Tea-scented Roses, we should never think of disqualifying a stand because Noisettes, as Narcisse, Céline Forestier, and Triomphe de Rennes, were exhibited amongst the true Teas, although if the wording of the schedule were for twelve Tea Roses, not twelve Tea-scented Roses, a doubt would arise in that case.

Gardeners' Working Hours (*Early Bird*).—From six to six are the general working hours for gardeners, with half an hour for breakfast, one hour for dinner, and half an hour for tea. A good anxious man will not adhere to these hours when work is much behind, and, on the other hand, the master should also make an allowance, so that the liberality should not all be on the workman's side. The hours, however, greatly vary, in some places there is an hour for breakfast, and none for tea. In other places there is no time for tea, but the men leave at 5 and 5.30. In winter, during short days, the general rule is, with the exception of breakfast and dinner, to work as long as the light will permit. All people who are particular should regulate their own time, and keep to it. A good workman can easily make up for a few hours' absence.

Various (*J. L.*).—We have never found "may bees, 'or *cockchafers*" eating green fly on Roses, but we have too often found the latter eating everything nice in the plant way that they could find. We have had fine *Mushrooms on Vine borders*, but it is much better to be without them. The spawn of all fungi is apt to rot the roots of growing plants, and thus often the roots are troubled with mildew. *Cactus blooms* will last much longer in a cool house than in a warm one.

Heating by Stove with Chamber (*A Yorkshire Amateur*).—Using the hopper to fill the furnace is a good plan, even without your peculiar arrangement of the damper at the base of the fire-box, instead of, as is generally the case, in the mouth of the smoke-pipe or chimney. When you once become thoroughly acquainted with the mode of using such a damper, so as to regulate the draught past it into the fire-box, you will, no doubt, manage to keep the fire burning a long time, and so as to yield a mild but regular heat; but with all that you will not obtain more heat than the fuel can yield, and before you become used to the management of the damper we fear that often the fuel will burn very slowly, or go out from want of air. Looking at the matter practically, then, we would attain the same object by having bars for the fire-box in the usual way, but with little space between them, and the sides and ends supplied with plates so as to afford room for fuel without air directly acting on it; then we would regulate draught by the ash-pit door to a nicety, and as a help after the fire was fairly set to work, we would also use the damper in the chimney. As a general rule, we see no advantage in a fire-box that would hold fuel for two days, quite the reverse. As to the plants you name—Tacsonia, Correa, Eutaxia, and Bouvardia, will thrive admirably in a temperature by fire heat of 50° in winter, rising some 10° or 15° by sun heat; 60° to 65° by night, and 70° to 80° by day, will be too hot for them, except in the summer months, when the sun heat would reach that temperature. Ixora coccinea will need the heat you specify when growing and showing bloom, a few degrees less will be better when the plant is comparatively at rest. When growing freely and showing bloom it dearly likes a little bottom heat. Your seedling Gloxinias are a different affair from the plants named, they will rejoice in a high temperature and a moist atmosphere. We have grown them well in a temperature of 60°, but a great deal better in a heat of from 75° to 80°, and not too strong sunshine after the blooms appeared.

Grub in Radishes (*E. Hodgson*).—If you had enclosed a specimen in a quill, we might identify it.

Ants (*W. T.*).—Sprinkle guano, or water with gas ammoniacal liquor over their nests and runs. Repeat until they desert the place. Dallas's "Elements of Entomology;" Notcutt's "Handbook of British Plants." The last-named can be had post free from our office if you enclose 3*s.* 8*d.* with your address.

Insects (*M. P. B.*).—The insect sent is the male of the Sirex gigas. It lives in Fir trees, the caterpillar making a cylindrical burrow. (*K. G. M.*).—The small beetles which have devoured your young Cabbage plants are the common flea beetle, Haltica nemorum. Powder slaked lime over the plants, and water them well to get them forward beyond the seed leaves. The green beetles which have gnawed the foliage of your hedges are the common weevil, Polydrusus Mali. Beat the bushes into an umbrella and kill the beetles, which will fall into it by hundreds.—I. O. W.

Names of Plants (*G. S.*).—Your Fern is Asplenium fontanum, and your informant must have been under mistake. Should you attempt to discriminate between A. fontanum and what is known as A. Hallari, this belongs to the former. (*Wiltshire*) —1, Rhinanthus Crista-galli; 2, Asperula odorata; 3, Lysimachia Nummularia; 4, Pedicularis sylvatica; 5, Stellaria Holostea; 6, Polygala vulgaris; 7, Lysimachia nemorum. (*Butler & McCulloch*).—Narcissus Jonquilla. (*J. P.*).—Prunus Padus; Erysimum odoratum. (*G. P. R. J.*).—Neither of the plants sent is an

Alyssum; the white one is Arabis albida, and the purple one Aubrietia purpurea. (*J. B.*).—Erysimum odoratum. (*J. C., Bromley*).—Your specimen is Syringa Emodi. Native of the Himalayan mountains.

POULTRY, BEE, AND PIGEON CHRONICLE.

PRIZES FOR THE BEST COCK AND HEN.

At most of the summer and smaller shows, prizes are offered for the "best cock and hen" in the different classes, and one would expect to find the best male and female bird taken together, obtaining these prizes. Instead of this being the case, we continually find some of our judges awarding prizes to the cock, entirely ignoring the hen. This, to say the least, is neither fair nor just to the exhibitor, who carefully selects his birds, so as to make them match in quality, size, colour, and general style. All breeders of poultry know there is as much difficulty in procuring good hens as cocks, and to breed successfully either male or female birds, as much depends upon the purity and quality of the hen as the cock. The prizes are distinctly offered for the "best cock and hen." Then why should judges, in making their awards, take no notice whatever of the hen, merely selecting the cock, and giving him the preference? Possibly the cock in one pen, if taken by himself, may be better than that in another, but he often has with him an inferior hen, while in the other there may be a good hen, and if the two are judged together would make by far the better pair; and as the prizes are intended for them, let our judges give justice and satisfaction to those who exhibit the best cock and hen.

I am led to make these remarks after having visited the Bath and West of England Show at Guildford. In several classes the hen was never noticed, or the prizes would not have been given as they were, and thus the judging in many cases gave great dissatisfaction, and naturally so, when some winning pens contained hens the very worst in the whole class, and in one or two cases were hardly worth the trouble of carrying away.—Cam.

SEX OF EGGS.

One of your correspondents revives the old question about the sex of eggs; I send you my experience. Last winter an old country poultry-keeper told me he could distinguish the sex in eggs; I laughed at him, and was none the less sceptical when he told me the following secret:—"Eggs with the air-bladder on the centre of the crown of the egg will produce cockerels, those with the bladder on one side will produce pullets." The old man was so certain of the truth of this dogma, and his poultry-yard so far confirmed it, that I determined to make experiments upon it this year. I have done so, carefully registering every egg "bladder vertical" or "bladder on one side," rejecting every one in which it was not decidedly one or the other, as in some it is only very slightly out of the centre. The following is the result:—Fifty-eight chickens were hatched, three are dead, eleven are yet too young to decide upon their sex; of the remaining forty-four everyone has turned out exactly true to the old man's theory. This, of course, may be an accidental coincidence, but I shall certainly try the experiment again. I am now trying the same theory upon Ducks' eggs. —W. H. P.

BANTAMS.

On taking up my copy of The Journal of Horticulture to-day, June 1st, I was agreeably surprised by reading the article from the pen of "Wiltshire Rector" on "What Poultry should I keep?" for my last recollection of him amongst the Bantams took me back to January 16th, 1866, and following weeks up to the end of March, when he told us that on his visit to the Birmingham Show at Christmas, 1865, he saw ninety-nine pens of Game Bantams, and that, "throwing aside a few coarse birds, a great number seemed one as good as another," and that "as to profit with them, of course there is none." He says, "I have kept all kinds of Bantams; the only sort I found profitable were Blacks." Also that Game Bantams "are easy to breed good." Many readers of "our Journal" will, doubtless, remember that these opinions raised a little friendly discussion at the time, and I am glad to observe not without effect, for "Wiltshire Rector" has at last become a convert to the side opposed to him then, and he now says, "Bantams are scarcely kept so generally as they ought to be, and they could be kept likewise with profit;" "no breed affords greater amusement and interest," &c.; "Bantams produce abundance of eggs, and especially the pullets of the Blacks and Black-breasted Reds are excellent winter layers," &c.

I am sure I can heartily endorse the above remarks, and will add that from a pretty long experience I can recommend the Game Bantams as being more hardy than either the best Blacks or Sebrights. I kept Black Bantams twenty-five years ago, and have had both them and the White Bantams since I became an exhibiter, but never found them so interesting as the Game, which I have bred carefully and studied closely for the last fourteen or fifteen years.

As the Rector says, it is quite safe, generally, to allow the large breeds, such as Cochins, Dorkings, and Brahmas, to run with the smaller kinds of Bantams without fear of a cross; but Game Bantams are frequently crossed with large Game fowls, and I have this season three broods of chickens of the first cross between a Game hen and a Bantam cock, and several broods of the second and third cross with the Bantam. In the Game Bantams, style and not size is the point first in importance, and the smallest Game Bantams are seldom good enough to win. Colour is also a great point in Game Bantams, and is of more importance than size.

Bantams are easiest to rear in April, May, and June, but the April birds grow larger than either the very early or later breeds; and where smallness of size is required, May and June may with advantage be selected for setting the eggs.

Our esteemed friend, the "Wiltshire Rector," shows a preference for Black-breasted Reds over any other colour of Game Bantams; but each of the four standard colours has its own special recommendation, and I really think that could he see my favourite set of Pile Bantams, cock and five hens, with the striking contrast between the creamy white body and tail, and red neck and saddle of the male bird, and the rich salmon breast and shoulder and white body of the hens, with their graceful carriage as they walk on the lawn in front of my house or in the fields surrounding it, he would admire them more than the Whites. Then the Brown-breasted Reds are great favourites of mine, with their large, expressive dark eyes, purple faces, golden hackles, and greenish black bodies in the hens; these are especially striking when close at hand. I am glad to see that so many committees of shows are adopting our suggestion, and offering prizes for Brown Reds this year, and hope the class will be well supported. Again, what can be more pretty than the glossy black breast, white neck, and golden saddle of the Duckwing Bantam cock, accompanied by his hens of a delicate silvery-grey, with light fawn breasts? These are great favourites with the ladies, and I should like to see more of them exhibited.

The Black-breasted Reds have long been my especial favourites, but after our Rector's recommendation I am sure I need not say another word in their favour, but with many other constant readers of "our Journal" I shall look forward with much interest to the future numbers of the series of papers commenced with the proudest and merriest of all poultry—the Bantam.—W. F. Entwisle.

REARING CHICKENS.

In your impression of May 11th I have read a paper on rearing chickens, or rather the experience of a noted breeder of Game, in which he states that Game birds cannot be bred to the standard required for exhibition except by in-and-in breeding. It is a great mistake and a baneful practice to breed birds in this way, of whatever variety they may be. I have bred Game for nearly twenty years, formerly for the pit, now for exhibition, and find my birds take their share of prizes awarded at most shows, and I can honestly say that they are bred without any relationship whatever to each other. It is a well-known fact that a Game fowl has a constitution which no other fowl possesses, and were breeding in-and-in adopted, the results must follow—viz., weakly constitution and want of courage, the reverse of a Game bird. In olden times, for fighting purposes, a cross with mother and son was sometimes adopted, and the result was often good, but care was taken not to breed again from the progeny, or the result might have been what has often been witnessed in the pit—viz., a bird having the winning card in his hand running away.

I breed upwards of a hundred chickens yearly, and rarely lose any, with the exception of a few young cocks destroying each other by fighting, which they sometimes do at six weeks old. My first time of feeding is at 7 A.M., and my last at 7 P.M., the food consisting chiefly of oat and barleymeal, groats, and whole barley; no house scraps nor artificial food is given. Nature should be followed as much as possible, and my idea is they should not at this season be fed so late as ten o'clock at night. If a chicken is taken up in the hand at that hour its crop will be found quite full, if plenty was given three hours previously. I give my hens thirteen eggs, and like to see as many hatched as possible. The chicks average from eight to twelve to each hen, and they seem to do well, as if it were the more the merrier. —D. H.

I am amused at the difficulty one of your correspondents experiences in raising chickens. I rarely lose a chicken, except by some accident, and few people have to contend with greater difficulties, as I am obliged to keep my pets quite out of sight, and a long way from the house, so that I can rarely see them more than three times a-day. I have now fifty strong chickens of ages varying from two months to a fortnight old; not one has died, but a cat killed six before we shot her, and another chicken was killed by a man who was turning a manure heap, burying the poor chicken, who was busy hunting for insects in company with its mother and nine brothers and sisters.

My plan of management is very simple. The coops are large and

well made, of the common pattern, and in front of each is placed another coop of exactly the same size, but with one side of sparrow-proof wire instead of wood. The eke, as I call it, is made of half-inch wood, so that I can easily move it. Every morning, about seven o'clock, I go to the coops, which are placed under a hedge with the wire side of the eke facing the east, and turn each eke half round, thus releasing the hen and chickens, which immediately go off into an orchard or shrubbery at their pleasure. About eleven o'clock I go in search of each brood, and give them a good feed of oatmeal, mixed very stiff with water. At half-past three o'clock I go to the coops, which have in the course of the day been cleaned out, fresh straw put in, and a large slate laid down in the eke. The chickens are tired, the hens hungry, and in a few minutes each hen is secured in her coop, well fed on rice boiled in milk, oatmeal mixed with water, and tail wheat and barley. The very little chickens also have chopped egg given them. Clean water is put in each eke in a flower-pot saucer, and no one again visits them till I go to let them out next morning. I always leave what I consider enough food for their breakfast as well as supper. All the food is fresh made and perfectly sweet.

I consider eight chickens as many as a hen can manage. The seven coops now occupied contain six hens and one brood whose mother has left them. It takes me five minutes to let them out, and about half an hour to secure them in the coops; the mid-day feed occupies me about ten minutes. In cold or wet weather the chickens are not turned out till about half-past nine, but only one day this year have they been kept in their coops the whole day, yet I have never had a sickly chicken. I rear from seventy-five to a hundred chickens every year, principally for the use of the table, though I occasionally exhibit a pen. I keep thorough-bred White Dorkings, and a few Houdans and Brahma hens for hatching half-bred chickens. Our favourite table chickens are hatched from Houdan hens' eggs, and we find them better eating than the thorough-bred Dorkings. My old fowls have a run quite distinct from the young chickens.

I have ventured to send you these particulars, as I fancy many chickens are lost by being too much cared for. Dry warm coops, a good run, small broods, and plenty of sweet wholesome food, are, in my opinion, all that is necessary to rear strong chickens.—One of your Oldest Subscribers.

Sulphate of iron for young chicks I use rarely and sparingly. Custard I give at the last meal at night till the chicks are six weeks old. It is made thus: Break up two eggs, as for table custard, add two tablespoonsful of milk beaten well into the eggs, then stir gently in a sancepan on the fire till the whole becomes dry and crumbly. The chicks love this food, and will greedily come from under their mother for it. If given by day they become careless of oatmeal and other food, which is better general eating.—Chanticleer.

BEDLINGTON POULTRY SHOW.

This Show took place on May 30th. The pens used were very substantial, being of wood, except the front and top; the former a moveable framework covered with wire. The number of entries was much larger than at any previous show.

Of *Dorkings* the prizewinners were good. The *Cochins* were a fair class; all the winners were Buff, and the cup for the first seven classes was awarded to them. *Brahmas* were all of the Dark variety, and the first-prize pen was very fine. There were some excellent *Spanish*, notably the first-prize pen, which is one of the best that has been seen of late. *Polish* were of moderate quality, and among the cross-bred fowls were some very large-framed birds. In the Variety class Crève-Cœurs were first, Houdans second, and Black Hamburghs third. In the class for single *Game* cocks Mr. Brough was first with a smart well-shown Black Red, closely pressed by a good bird of the same colour shown by Mr. Aykroyd, and the third was Brown Red. In the class for a cock and hen the first and second-prize birds were Brown Reds, and the third Black Reds. The cup for the best pen was awarded here. The class was good throughout. With the exception of the first-prize pen, the Duckwings were poor, but in the Variety class was a pen of Whites such as are now rarely seen. Of *Hamburghs* the classes were small, with the exception of the Golden-spangled, which were both numerous and of high quality, and the cup for this section was won by the first-prize pen. The neighbourhood of Bedlington is famous for *Bantams*, and the entries of this year fully bore out its reputation; and for the second year the cup for the best pen has been won by a local exhibitor, and on each occasion with Black Red Game, although this time closely run by a neat pen shown by Mr. Rogers, of Sunderland. The first-prize Bantam cock, a Black Red, was almost perfect. In the Variety class for Game the first-prize birds were a good pen of Piles; and in the next class very good Blacks were first and second, and Golden Sebrights third. Several classes were devoted to cottagers, and some good specimens of most kinds were shown.

In the *Pigeon* department we have to record a novel method of exhibiting, of the advantages of which we are somewhat doubtful, although we confess we can see an advantage to exhibitors, as it is without doubt showing made easy; we refer to the system of exhibiting one bird as a pen, either sex being eligible. The success in this case was somewhat varied, only the Tumblers, Turbits, Jacobins, and Variety class producing any numbers. The entries in the remaining classes were but few. The Carriers were poor, but the Tumblers good, all the winners in the latter class being Almond. In Pouters the first was a Red cock very good in all points, and the second Blue. A medal by subscription was offered for the best bird from an owner living in the county of Durham or Northumberland, the bird not having won the cup for the best in the show, and it was awarded to a perfect Black Turbit, the second in the same class being a handsome Yellow. Barbs were moderate, but the Jacobins most exquisite. The first prize and cup for the best pen were won by Mr. Haansbergen with a Black as perfect as can be wished for, two second prizes being awarded, one going to Red and the other to Yellow. Fantails were poor, but the Variety class made amends, as most of the birds were worthy of a place. The first was a Black Mottle Trumpeter, and the second a Yellow Dragoon.

The Show was a great success, and the number of visitors was very great.

Dorkings.—1, J. White, Warlaby. 2, W. Swann, Hirst Head, Bedlington. 3, Miss M. Storey, Arcot Hall, Dudley.

Cochins.—1 and Cup, G. H. Proctor, Durham. 2, W. Atkinson, Bishop Auckland. 3, T. Graham, Netherton. *hc*, J. Hind, Strickland Gate, Kendal; G. H. Proctor. *c*, Miss E. Swann, Hirst Head, Bedlington.

Brahma Pootras.—1, E. Aykroyd, Eccleshill, Leeds. 2, J. Neasham, West Sleekburn, Bedlington. 3, W. Atkinson. *c*, T. Thornton, Cowpen, Blyth; E. Corney, Whitby.

Spanish.—1, W. Atkinson. 2, Sanderson & Oliver, Whalton. 3, H. Wilkinson, Earby, Skipton. *hc*, M. Gibson, Woodhorn, Morpeth; W. Jaggs, Blyth.

Polish.—1, Parsons & Wilson, Barrington. 2, W. Bearpark, Ainderby Steeple. 3, Buglass & Williamson, Carville. *hc*, Z. S. Turner, Boroughbridge (2).

Bantdoor Fowls (Cross bred).—1, R. P. Moon, Driffield. 2, H. Merkin, Driffield. 3, R. Moor, East Rainton. *hc*, J. Glessal, Milnthorpe; Miss E. Swann; C. Armstrong, Bebside.

Any other Variety except Bantams.—1 and 3, Mrs. J. Cross, Appleby Vicarage Brigg (Crève-Cœur and Black Hamburghs). 2, R. Moore.

Game.—*Black-breasted and other Reds.*—1 and Cup, E. Aykroyd. 2, T. and J. Robson, Bishop Auckland (Brown Red); G. Holmes, Great Driffield. 3, J. Brough, Carlisle (Black Red). *hc*, Buglass & Williamson, Carville (Black (Red); T. Swann, Bedlington Colliery (Brown Red). *c*, J. Moreton, Marley Hill, Newcastle (Brown Red). *Duckwings and other Greys.*—1, T. & J Robson, Bishop Auckland. 2, E. Aykroyd. 3, G. Holmes. *hc*, J. Mason, Worcester. *Any other Variety.*—1, G. Percy, West Cramlington Colliery. 2, J. Brough, Carlisle (Lemon Piles). 3, H. Mulley, Sunderland (Black). *Cock.*—1, J. Brough (Black Red). 2, E. Aykroyd, Eccleshill, Leeds (Black Red). 3, T. Swann (Brown Red). *hc*, Sanderson & Oliver (Black Red); J. Watson, Knaresborough; G. Lawe; W. Lindsey, Morpeth.

Hamburghs.—*Golden-spangled*—Cup and 1, J. Rollinson, Lindley, Otley. 2, W. Bearpark, Ainderby Steeple, Northallerton. 3, G. Holmes, Great Driffield. *hc* J. Rollinson; W. Whitfield. *c*, R. P. Moon, Driffield; J. Watts, King's Heath; G. Johnson, Choppington. *Silver-spangled.*—1, H. Pickles, jun., Earby. 2, Ashton & Booth, Broadbottom, Mottram. 3, G. Holmes. *hc*, R. Moore, East Rainton. *c*, G. Cook, Bebside. *Golden-pencilled.*—1, J. Rollinson. 2, W. Whitfield, Hetton-le-Hole. 3, H. Pickles, jun. *hc*, J. Armstrong, Carlisle; R. Moore; T. H. Redman. *c*, J. Armstrong. *Silver-pencilled*—, H. Pickles, jun. 2, Parsons & Wilson, Barrington. 3, R. Blackburn. *c*, G. Holmes.

Bantams.—*Any Variety.—Cock.*—1, G. Todd. 2, E. Rutherford (Sebright). Equal 2, J Young, Kitty Brewster (Brown Red). 3, H. P. & W. Gray, Tow Law, Durham (Black Red). *hc*, G. Dobson, Lougtown (Black Red).

Game Bantams.—*Black-breasted and other Reds.*—Cup and 1, A. Hay, Bedlington. 2, W. Rogers, Sunderland. 3, G. Dowie, Bedlington. *hc*, G. Hall, Kendal; W. Grice, Crosshouse, Bootle; F. Steel, Burnley; J. Archbold, Earlstown. *Any other Variety.*—1, T. C. & E. Newbitt, Epworth. 2, T. Reavely, Bedlington Station (Duckwings) 3, H. P. & W. Gray (Piled). *Any other Variety except Game.*—1, E. R. Turner (Black). 2, G. Taylor (Black). 3, W. Davison, Bebside (Golden-laced). *hc*, H. Pickles (Black).

Ducks.—*Aylesbury.*—1, Miss Wilson, Morpeth. 2, O. A. Young, Driffield. 3, T Carver, Langthorpe. *hc*, J. O'Leary, Bedlington. *Rouen.*—1, T. Carver. 2 and 3, Miss S. F. Wilson. *Any other Variety.*—1, J. Swann, Bedlington (Muscovy). 2, Mrs. T. S. Bramwell, Jesmond Dene Hall (Buenos Ayres). Miss Wilson.

Guinea Fowls.—1, Miss Wilson. 2, J. Robson, Stannington. 3, O. A. Young.

Selling Class.—1, J. Stark, Bebside (Brown Red Game). 2, J. Yellowly, Barrington (Partridge Cochins). 3, J. Stalker, Bedlington (Spanish). *hc*, G. Hall (Brahmas); W. Jaggs, Blyth (Spanish).

COTTAGERS' CLASSES.

Game.—*Any Variety.*—1, T. Aisbett, Bedlington Colliery (Black Red). 2, T. Swann (Brown Reds). 3, F. Rutherford (Black Red). *hc*, M. Mycroft, Bebside.

Hamburghs.—*Any Variety.*—1, D. Cheyne, Bebside. 2, T. Stephenson, West Sleekburn (Golden-pencilled). 3, G. Johnson, Choppington. *hc*, R. Parsons, Barrington.

Any Variety not Previously Mentioned.—1, J. Mills, Netherton (Cinnamon Cochins). 2, R. Parsons.

Bantams.—*Any Variety.*—1, E. Rutherford (Black). 2, G. Dowie. 3, G. Bell, Bedlington (Black Red).

PIGEONS.

Carriers.—1, G. Sadler, Boroughbridge. 2, H. Yardley, Birmingham. *c*, Messrs. W. R. & H. O. Blenkinsopp, Newcastle.

Tumblers (Any Variety).—1, W. Roberts, Newcastle. 2, R. Daniels, Newcastle (Self-colour). *hc*, Messrs. W. R. & H. O. Blenkinsopp (2); R. Anderson, Newcastle.

Pouters.—1, R. P. Moon, Driffield. 2, T. Rule, Durham. *hc*, J. Bell, Newcastle-on-Tyne; R. Daniels.

Owls.—1 and 2, W. R. & H. O. Blenkinsopp.

Turbits.—1 and Medal, W. B. Van Haansbergen, Newcastle. 2, J. G. Dunn, Newcastle. *hc*, R. Thompson, Penrith (2); W. Bearpark; R. Frew, Kirkcaldy.

Barbs.—1 and 2, R. Daniels. *hc*, C. Gravil, jun., Thorne. *c*, W. R. & H. O. Blenkinsopp.

Jacobins.—1 and Cup and 2, W. B. Van Haansbergen. Extra 2 and *hc*, T. Rule. *c*, W. R. & H. O. Blenkinsopp.

Fantails.—1, T. Rule. 2, W. B. Van Haansbergen. *hc*, H. Yardley.

Any other Variety.—1, T. Rule. 2, J. G. Dunn (Dun Dragoon). *hc*, M. Ord, Ferry Hill (2); J. Cundale, Copt Hewick, Ripon; H. Yardley; W. Bearpark (2); R. Anderson.

Selling Class.—1 and 2, R. & J. F. Baldwin (Red Turbits and Jacobins). *hc*, J. Miller, Newcastle (Yellow Turbit). *c*, W. J. Donkin, Newcastle (Pates).

The Judges were Mr. E. Hutton, Pudsey, and Mr. Shorthose, Newcastle-on-Tyne.

Death of Mrs. Chichester, of Runnamoat.—The demise of this amiable and accomplished lady, the wife of Lieut.-Colonel C. Raleigh Chichester, and eldest daughter of the late James Balfe, Esq., took place at her residence at Runnamoat, on the 29th of April, and in the fortieth year of her age. This lady

did much to encourage industrial pursuits in the county of Roscommon, and her dairy, poultry-yard, and other matters of feminine care were a model to the county, and secured prizes at several shows in different parts of the country. She was a kind lady to her humbler neighbours, and exerted herself much to promote whatever would tend to improve their condition.

COURIER PIGEONS.

The following are extracts from an interesting paper read by Mr. R. W. Aldridge, before the West Kent Natural History Society:—It is to the modern Belgians that we must award the honour of developing and applying to practical purposes that marvellous instinct by which the Pigeon finds his home from almost incredible distances. This instinct they have aptly termed "prientation," the nearest reading of which is the power of finding the cardinal points. About the year 1820 the discovery was first made that by coupling Pigeons possessing distinct qualities, as high flying, strength of wing, and keenness of vision, a breed of birds might be produced combining all these qualities in one individual. These birds have been produced, and are now known in England as Antwerps. It must not be supposed that the present perfection to which Pigeons have attained was arrived at without the greatest attention and perseverance on the part of the Belgian amateurs; indeed, their capabilities were but gradually brought out. In the year above mentioned, a circumstance occurred which gave a great impetus to the already rising interest. It was the return of a Pigeon from Paris to its home at Verviers, a distance of over 150 miles—a feat hitherto without precedent, and considered so wonderful that the bird, enclosed in a basket, was carried in triumph through the town, preceded by two men playing on violins, accompanied by two small pieces of ordnance, which were discharged at the entrance of the principal streets, to announce the arrival of the hero.

Up to this period a few unimportant *sociétés colombophiles* had existed; but now their growth was so rapid, that at the present time there is scarcely a Belgian village of any consideration without its society. *L'Epervier* newspaper, published at Brussels, is the organ of three hundred such societies, and confines itself to chronicling their movements, such as reporting races, announcing forthcoming meetings, advertising rewards for strayed Pigeons, public sales, and *nouvelles colombophiles* in general. There also exist two societies, one offering rewards for the destruction of birds of prey, the other for prosecuting persons detected in poaching or injuring Pigeons; and within the last few weeks a petition signed by upwards of four thousand amateurs has been presented to the Chamber of Representatives, urging still more stringent laws.

The great race of the country takes place annually in July. It is organised in Brussels. In 1868 the number of birds engaged was fifteen hundred. Both the King and the Comte de Flandre give handsome presents, and the city of Brussels subscribes 900f. These facts show that the interest taken in this national hobby is even more universal than that created by our English Derby. Before the introduction of railways in Belgium, the mode by which the societies' Pigeons were trained was certainly economical, primitive, and picturesque. A *charette* (country cart) was engaged; it was hooped over and covered in with canvas; perches and food were provided for the use of the birds. The driver was directed to the local authorities of some distant town, who witnessed the flying and attested the fact. Another system, but even more primitive, was by the "hotte," which was a wicker basket made to fit the shoulders and back of a *convoyeur*: the "hotte" was divided into five flats, or floors, each capable of holding ten Pigeons. With this load of fifty, the poor unfortunate wretch, with his still more unfortunate passengers, journeyed frequently ten or twelve days before they reached their destination; the birds to obtain their liberty, and he his coveted certificate of the fulfilment of his engagement. Fortunately, facilities have grown with the necessity. The "charette" and "hotte" are things of the past. It is now no uncommon sight on special days to see from three to four hundred baskets of Pigeons arrive at the same railway station, to be flown from that particular neighbourhood under the superintendence of a *commissionnaire* appointed by a confederation of *societes colombophiles*.

The training of young birds is now conducted in Belgium in a much more systematic manner than it is in England. Here every one trains according to his notions, while in Belgium it is managed principally by the societies. Two methods appear to be in practice. In the first the young bird is not required to take part in any contest before the month of June or July; but before the close of the flying season will be expected to have done a journey of at least 150 miles. Some amateurs object to this training as being too severe, and prefer the second method, as follows:—During the first year the young bird is only subjected to inconsiderable distances; the second year it is allowed to mature itself in idleness; but the third year, as it is then considered to have attained full development of all its faculties, it is retained until its performance is satisfactory, both in speed and distance.

As examples of what Pigeons are capable of doing, I quote from an unquestionable living authority, M. F. Chapuis, M.D., and Doctor of Natural Science, of Verviers. In his published list of twenty-one races, or flies, he mentions one from St. Sebastian, in Spain, to Liege, in Belgium, a distance of 550 miles, in sixteen hours. A Pigeon belonging to M. Grooters, of Brussels, has recently taken first prize in a race from Narbonne to Brussels, 510 miles. M. Ida Vivier, of Courtrai, in Belgium, possessed a bird that had flown from Belfast, Ireland, to Courtrai. Upon reference to the map this flight appears to be even more marvellous than the others, as the bird must have crossed St. George's Channel, England, and the Irish Channel. Instances of long journeys performed by untrained birds are by no means uncommon. The last-named gentleman recently possessed a bird that had flown from Chateauroux, in France, to Courtrai, 276 miles, without any training whatever, and this bird was an imported Black Dragoon. It is very questionable if it would have done the distance in England at all; for it must be taken into consideration that the country passed over was remarkably favourable, there being few elevations, and a south wind usually prevailing, which would greatly facilitate the passage of the bird.

But although the Belgian voyageurs certainly excel any English breed in distance, ours have the advantage in speed; for, upon examining the results of several races, I find the greatest velocity attained does not exceed five-eighths of a mile (one kilomètre) per minute. A feature worthy of consideration, as a reason why the Belgian Pigeons excel in flying such distances in France and in their own country, is that they are at a certain season of the year often driven by their owners to seek their own living, and as both Belgium and France are grain-growing countries, the birds have at such season no difficulty in satisfying their wants from the growing crops while in course of making any very long journey—an advantage not possessed by Pigeons in England. It is my impression that we possess in our sheer Dragoons and coarse Beards, or crosses from them, birds that under the same circumstances of careful breeding, feeding, and training, combined with flatness of country and clearness of atmosphere, would do all of which the celebrated Antwerp is capable. So careful are some breeders of birds destined for long distances that they only permit one young one to be raised by the parents, and will not train a bird hatched later than the middle of February, and none later than the middle of March.

A great diversity of opinion exists with regard to the colour of the eye, "pearl eyes" being much preferred; but one of the most celebrated birds now in Belgium has black, or bull eyes, a colour always repudiated here. I find that this celebrated bird has beaten all its competitors in travelling in foggy or very heavy weather, and has reached its home late of an evening, when the others have lodged for the night, and not returned until the following morning, as is customary in long flights, there being only one instance on record of a Pigeon having flown 500 miles in one day. I think this apparent eccentricity in the colour of the eye in so good a bird may be satisfactorily explained in this way. The Woodcock, Snipe, and all night-flying birds possess black eyes. The wild Duck has a piercing black eye, and not only flies at night, but sees well under water. The Swallow, so active at the close of the day, has similar-coloured organs of vision. On the other hand, the Capnlet, a Pigeon scarcely known in England, has an eye infinitely whiter than pearl. It is the highest-flying and the longest on the wing of all the Pigeon tribe, and mostly chooses mid-day for its flights. I have just had presented to me by the President of the *Société peristerophile* of Courtrai, a noted bird of this species, which has been known to be on the wing from 8 A.M. to 3 P.M. From such facts as these I consider it conclusive that pearl or white-eyed birds succeed the best in broad daylight and clear weather, while the black or bull-eyed are the most to be depended upon under directly contrary circumstances. The faculty by which Pigeons find their way home, I think, may be explained thus. Upon being set at liberty the bird at once mounts in the air and performs three circles. This flying in circles is entirely confined to Pigeons. On making the last round it takes a straight course to an uncertain distance, and if at the end of that distance its vision fails to recognise an object within the circle of the locality of its home, it returns to the place whence it has flown, when it again sets off in an opposite direction, and repeats the experiment until it either catches sight of some familiar landmark, or gives up in despair, and becomes a lost bird. Mr. James Glashier, the celebrated aëronant, being present, stated that when over London one mile high he clearly saw the cliffs of Dover with the naked eye; presuming the vision of a Pigeon to be no stronger, it would then take in at that height a circumference of at least seventy miles. Thus, if the bird be thrown 100 miles distant, it would see forty miles within the circle of its home locality. Long distances, such as 500 or 600 miles, as a rule, are only attained by progressive training, by which the memory of the bird is educated.

CANARIES AND RABBITS AT STROUD SHOW.

IN THE FANCY—CANARIES.

They were born the night we arrived, the "twosome" were; one, at least, was, I am sure, for I found the shell in the bottom of the cage. It's just a week to-night since we four—that is, our host and hostess, "B. B." and I, filed out of the dining-room after dinner, bent on a visit to the bird room. Our hostess, who is "in the fancy," led us out at the front door, round the end of the house, along a short path hedged with evergreens, across the back courtyard, past "Darkie's" kennel (Darkie is a fox-terrier of noble family, great at fox or badger, and addicted to cats), up an extemporised staircase, to ascend which necessitated an acrobatic performance with a rope, and we stood within the precincts of the sanctum sanctorum. I don't know which was the more difficult feat of the two—to ascend that staircase with a bunch of groundsel in one hand and a plate of chopped egg in the

other, and take hold of the rope the best way one could, or to make the descent with a bowl of water, a dustpan, and a long-handled brush. Somebody will come to grief at that staircase some day. But I am going on too fast, beginning at the middle.

As far back as before last Christmas I received an invitation from a gentleman "in the fancy" to spend a portion of the vacation in Gloucestershire. At that time he had not entered the charmed circle, though engaged in making active preparations to do so by furnishing a bird room. His experience in Canary-breeding had been chiefly confined to an illegitimate sort of business, about which just one word for any whom it may interest. In a pleasant corner of the lawn stands the old Canary establishment, a circular aviary, brick foundation, rustic uprights (I think they were larch poles), about one-third of the circumference boarded to afford protection from prevailing winds, and the rest neatly wired; a heavily-thatched roof, rockwork, and roses, and you have the aviary. Here, without any protection whatever other than I have mentioned, Canaries live in comfort all the year round. Asthma, puff, pant, blow, bronchitis, wheezing, and sneezing are alike unknown; and when the snow, drifting in through the uncovered wirework, lay inches deep in the interior, and it was necessary to break the ice in the water vessels morning, noon, and night, the inmates suffered no discomfort, but sang away as cheerily as the little German fellow in the morning-room, who lives in a genial atmosphere, and is surrounded by a very paradise of exotics, and pours out of his little throat such long trills and gushes of delicious melody.

But to return to the aviary for a moment. Nest boxes are suspended against the protected side of the erection, and, material being supplied, the hens build away, each according to its own ideas of domestic comfort, and with some diversity of architectural design. Apparently they hold very easy views of the rights of property, as many of the nests held two tenants, the spirit of peace and harmony pervading the whole scene seeming to indicate very little probability of there ever being a disputed claim to the title of any estate.

Business and other engagements conspired to prevent my travelling south in the winter, but being retained to judge at the late Stroud Show, I bethought me of my long-standing invitation, and that is how I last week found myself at the base of the Cotswolds. "B. B." went with me on this occasion. I do not like to expose family secrets, but I was afraid she would break out in a fresh place and write another letter.

To us who live in an atmosphere of smoke, in a district exposed to long-continuing east winds, which blight and blacken the half-developed beauties of early spring, where timbered hedgerows are regarded as iniquities, and wire fences ornamental, the sylvan beauties of Gloucestershire appeared more than ordinarily lovely. Picturesque little roadside thatched cottages, overhung with vines or clustering roses, are represented with us by a severe article in brick, while the many concomitants of a manufacturing and mining locality form prominent features in our landscape. A few hours express behind the iron horse carried us from all this into another world. It had been raining the greater part of the afternoon, and Nature looked grateful for the refreshing showers. Every stage of our journey introduced us to new beauties and ever-varying prospects. A drive of about four miles from Cheltenham and we were at home. Such a home! A fine old English house, only sufficiently modernised to convey the idea of additional comfort, surrounded by every conceivable beauty, and the whole, to us, invested with a charm which no word-painting of mine can depict.

And after dinner we went into the bird room, concerning which and the "twosome," as we say in the north, more anon. And there we sat and talked Canary, my old friend up above dodging about behind the still heavy rain-clouds, and smiling complacently on "the fancy." There we sat till the tea bell rang. The flying trapeze performance and the perilous descent were safely accomplished, and after tea (with a little more Canary), and finally something else out of a sort of overgrown chronometer box, we retired to rest, and the last event of the day of which I have any distinct recollection was the clock of the village church striking twelve, and chiming the melody usually sung to Lyte's beautiful composition—

"Abide with me, fast falls the eventide."

"B. B." told me next morning that it chimed three verses, but—— I never heard the end of the third.—W. A. Blakston.

(To be continued.)

RABBITS.

The assemblage of Rabbits was of such high merit that it deserves more than a mere record of the names of the prize-winners given in our last week's Journal. It is very rarely that so numerous a collection is found, especially at a first show, as I believe this one was. The pens were large, even larger than I have seen them for pairs of Rabbits, and well supplied with hay and oats; and a small portion of green food was given, for this is used with caution by some of our largest breeders. I have no doubt all the Rabbits returned home none the worse for their visit to Stroud. I must warn exhibitors of the importance of their animals being at the show in time, for some valuable specimens did not arrive at Stroud until after the awards had been made. The judging commenced at eight o'clock, and every Rabbit was taken from its pen, and the ears of every "Lop" measured, and the size recorded; and it was remarked that the healthiness of the whole was very satisfactory. The owners of one or two specimens amongst the Lops, however, will do well to examine the ears of their Rabbits, and sprinkle in them a little flowers of sulphur—a never-failing application to remove any small accumulation of "gum" that will at times appear. The gum is no injury to the Rabbit if taken in time, and is perfectly cleared off in a few days.

The schedule attracted some thirty-seven Lops, twelve Himalayan, eight Angoras, eleven Silver-Greys, and thirteen Belgian and Dutch for the "Any other variety" class, or about eighty-one entries in all, and it is rather a difficulty to decide which of these specimens attracted the most attention. The Self-coloured class presented some good animals, and the first-prize doe of Mr. Gravil, Thorne, possesses some good points of merit; also the buck of Mr. C. H. King, of St. John's Wood, London. The third-prize doe of Mr. G. Quick, from St. John's Wood, also gives promise of becoming a good Rabbit. In the Black or Blue and White class were found some well-marked animals, and Mr. H. Ridley's doe, from Hallfield, York, deserved the first position she took, and the second-prize buck of Mr. C. King also is deserving of favourable mention. The third-prize doe of Mr. A. H. Easten, West Parade House, Hull, is well marked. The Yellow and White class presented a large first-prize Rabbit, well marked, owned by Mr. W. Arkwright, Sutton Scarsdale, Chesterfield, and the specimens of Messrs. P. Ashton, Drypool, Hull, and J. E. Palmer, Peterborough, should also have favourable mention. In the Tortoiseshell, the buck (first-prize), belonging to Mr. A. H. Easten, deserved the prize awarded, as the marking is well varied for this class; and Mr. King's two prize-winners are good, as also Mr. Gravil's. This class as a whole was excellent. The Lops, in their five classes, included some of the best Rabbits in the country.

The Himalayan were almost on an equality as regards merit, so that considerable care was requisite to determine the most excellent. Mr. Boyle's first-prize was closely followed by Mr. J. Butterworth's (Rochdale) second-prize Rabbit, both excellent, with the deep dark shade on all extremities; and the third-prize of Mr. H. Cawood, Thorne, gives promise of a good Rabbit and large, which we do not always find in this variety—they are usually too short and stumpy. The Angoras in all their fleecy whiteness presented a favourable contrast to their neighbours in the next pen. The first-prize of Mr. C. King was large and well woolled; also that of Mr. Barrett, jun., Stroud, and Mr. H. Cawood, both young Rabbits, but evidently from a good strain, with hair of that silky fineness so much to be desired, and also of great length. Some other specimens deserve mention, as those of Messrs. Easten and J. Butterworth. They were beautifully clean and white; and I may hint that if exhibitors would just consider how the beauty of these showy animals is increased by the use of the comb they would not deny them that little attention. The "cute" Silver-Grey of Mr. A. H. Etches, Stafford Street, Market Drayton, a large, beautifully silvered animal, fully deserved the position she took, the silvering is so general. The doe of Mr. S. G. Hudson, Paragon Street, Hull, is an excellent specimen, large and well-formed; and that of Mr. J. Wigmore, Painswick, is a neat specimen. This class was well represented. The "Any other variety" class contained some good specimens of the Black and White, Grey and White, and Yellow and White Dutch, and some fine Belgian Hare Rabbits. The first-prize Dutch Rabbit of Mr. J. Boyle is an almost perfectly marked specimen. Mr. Sabbage, Northampton, came in for the second prize with a neat Blue buck, and the Yellow and White of Mr. Barrett, jun., gives promise of a good Rabbit. The fine Belgian Hare Rabbits of Mr. S. G. Hudson are too valuable to escape notice. The Selling class contained some good Lops from Messrs. C. King, G. Quick, and E. Vaughan, Birmingham, and the prizes awarded to these Rabbits (Lops) were not more than their merits entitled them to. The cup for the winner of most points was taken by Mr. C. King, and to it he was fully entitled. —Charles Rayson.

OUR LETTER BOX.

Railway Charge (*C. Leat*).—We cannot find space for details of disputed charges.

Inquiry.—C. Normsn, Westerfield, would be glad to know if there is any such person, or place, as T. H. Kilshaw, 4, Kensington Street, Kensington, near Liverpool.

Romford Show (*I. W. B.*).—It is in Essex.

Swelling on the Ball of a Fowl's Foot (*J——.*).—The cause may be twofold. It may be from bruising the ball of the foot by flying down from a high perch; or it may be from a small stone or fragment of flint that has pierced the skin. In either case you must poultice the foot and remove that which offends. The bird must have the foot wrapped up till the wound is cured.

Woodbridge Poultry Show (*J. S.*).—Let your solicitor give the Secretary notice that unless the money for the fowls sold be immediately paid to you, proceedings will follow in the County Court; and carry out that threat if needed.

Brahmas (*J. A. P.*).—The best work on this variety is Wright's "The Brahma Fowl." You can have it post free from our office if you enclose 5*s.* 3*d.* with your address.

Knowing Ducklings' Age (*H. H., Sydenham*).—You cannot tell the exact age of a duckling if its life counts by weeks. Food has much influence. Three good meals of proper food per day make "osmazone and fibrin," and the recipient thrives; while "a lack of meat and no vegetables" check growth and strength. The indications of youth are soft feathers, which have no quills, the remains of down on the head, the absence of feather on the web of the wing, extreme delicacy of the skin

that covers the legs, and a very soft bill. Size, development, and condition are dependant on food. With ground oats, barleymeal, vegetables, grass, fresh mould, and road grit, we need no "patent food." We do not like it, and we never use it.

REARING PARTRIDGES (*E. M. B.*).—As soon as your birds are out, let them be conveyed with the hen to a dry grass field, and if on a rising ground so much the better. The hen must be under a rip, the bars of which allow free egress and ingress to the young. If it be a clover field, some small runs should be cut extending a yard or two from the rip; it is good for them while young, and when older they will work their own way into the stuff. Feed them on bread and milk, chopped egg, chopped cooked meat, bread and cheese, curd, and bruised corn. Let them always have fresh water. You should hatch and rear all.

CROSS BETWEEN SILVER-GREY AND BROWN DORKINGS (*Constant Reader*).—Beyond a doubt; and we should expect good things of the produce. It will often happen to you, when you are trying to breed pure Silver-Greys, that you will get such as you will have now.

COCHIN-CHINA PULLET LAYING AT ELEVEN WEEKS OLD (*D. I*).—It is a very unusual occurrence. The earliest we ever knew was fourteen weeks. It is not very rare to find pullets laying at sixteen weeks old. The atmosphere in which she has been kept may have had an influence in the matter.

EXHIBITING GAME FOWLS (*Juno*).—It is better to put a Game cock up for a week before he is shown. Feed on ground oats, chopped raw meat, and a few white peas. Some give raw yolk of egg. Keep him very clean. The principal difference between the Black and Brown Reds is, that in one the breast must be black, while in the other it must be brown.

RUNTS NOT REARING THEIR YOUNG AND LAYING DOUBLE-YOLKED EGGS (*W. C. Morris*).—Runts are bad nurses—that is, if they are good Runts, Runts of large size. It is best to keep a number of common Pigeons to raise the young ones. A cross between an Antwerp or Dragoon and a common Runt makes strong, good feeders, and their own young being large are acceptable in the kitchen. It would seem to be a law in Pigeons, that wherever there is a very great departure from the original type, whether in largeness, smallness, or alteration of form to a great degree in any way, then the Pigeons so altered are bad rearers of their young. Thus this is seen in Runts, Almond Tumblers, and well-bred Pouters, and we find it so in the very small Scotch Fantails. In Spanish fowls the largest eggs are laid in the spring, and then double eggs are not unusual, but it is, we believe, far less usual among Pigeons, though we are not surprised in the case of Runts.

VARIOUS (*M. R. Fairer*).—The above answer replies to one of your questions. Your birds are high-bred, and all such Tumblers neglect their young, pairing again and nesting too soon, and the young ones die, as you say, with their crops full, and really of cold, they needing the warmth of their parents. The cross you mention will produce birds strawberry in colour and utterly useless. No true fancier crosses varieties. Feed your flying Tumblers more sparingly, and drive them up in the morning before feeding. Good flying Tumblers should not be kept with other varieties, and should be regularly trained to fly.

PIGEONS—THE WHITE EYE (*Reader*).—We are inclined to think that the birds you describe are thorough mongrels. There is no breed known as "The White Eye." There are many varieties that are imperfect unless they have the white eye, but such point alone is no reason why any variety separately should monopolise the name. Barbs, Nuns, Magpies, Balds, Beards, and Tumblers should all have white eyes. Many, and some of the best, too, of the Antwerps have white eyes, and some are without bars or a coloured neck, in fact almost colourless; and we think the birds to which you allude are a cross between the inferior colourless Antwerp and the Long-faced Tumbler, for Tumblers fly high and for a great length of time; they also have white eyes and a Dove-shaped beak. They will without difficulty find their home from a reasonable distance.

FLEAS ON RABBITS (*Young Subscriber*).—Your Rabbits may be cured of fleas by sprinkling their skins with "Keating's Insect Powder." The hutches should be cleaned out oftener than once a-week, and a disinfectant used; then pine wood sawdust. Use oat straw for bedding, and lime whitewash at times during this hot weather. Let the hutches be well ventilated.

QUEENLESS HIVE (*H. J., Thames Ditton*).—If the brood comb which you inserted has failed, you had better procure a second swarm and shake the bees into the hive.

UNITING HIVES (*Amateur*).—Allow your stocks to work as they are until autumn, then drive and unite the bees, putting them all into the best of the three. If you use frame hives, you could now drive out, in succession, the bees of your weak stocks into one straw hive; having cut out the combs fix the best and all those containing brood into frames in the manner so often described in this Journal; and then knock out the united bees on the tops of the frames. You would in this manner probably make a really strong and prosperous colony.

SWARM LEAVING HIVE (*A. A., Richmond, Surrey*).—Your swarm has most probably lost its queen; if so, you will hardly succeed in inducing the bees to remain in any hive you may give them. If they do, but still show a disinclination to work, procure, if you can, a second swarm, and unite it to them. Before doing so, turn up the first swarm, and see if any combs have been built, and whether they are worker or drone-celled, and if the latter, cut them out. Your hive being new had nothing to do with the bees' desertion.

MESSING INSIDE OF HIVE—TANGING (*D. K.*).—An experienced apiarian would not have "well dressed" the straw hive with syrup prior to shaking in the swarm. No wonder that the bees were disgusted with the nasty clammy state of the interior of their new quarters, and preferred trying to seek others. A dirty rotten old skep, if dry, would have been more acceptable to them. We also thought that the practice of "tanging" bees, with the idea of causing them to settle satisfactorily, was confined to the most ignorant class of bee-keepers. We have constantly, in the pages of this Journal, endeavoured to convince our apiarian readers of the inutility and injudiciousness of making noises of any kind when a swarm is in the air.

WOODBURY HIVE, FRAMES, SUPER, &c. (*Bee-keeper, Galway*).—Two of the bees sent appear to be small drones, the others were too much crushed for us to give any opinion as to what they are. Unless specially ordered, the frames of the Woodbury hive are generally sent out entire, the majority of bee-keepers finding a difficulty in manipulating with the loose bars. Whether you have the right Woodbury hive or an imitation we do not know, but assuredly you have not the proper super for it, which should certainly have bars identical in every respect with those which fit in the compound frames. You had better order a set of the latter; you will find both these and the solid frame useful. The bars should not be removed from the hive prior to hiving the swarm. The inventor of the Woodbury hive neither makes hives nor employs any agent for their sale.

MINT SAUCE IN WINTER (*A New Subscriber*).—Cut the mint just before it flowers, dry it thoroughly in a cool dry place, then rub it into a powder, bottle it, cork tightly, and use as needed.

METEOROLOGICAL OBSERVATIONS,

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude 111 feet.

DATE. 1871. June.	9 A.M. Barometer at 32° and Sea Level.	9 A.M. Hygrometer. Dry.	9 A.M. Hygrometer. Wet.	9 A.M. Direction of Wind.	9 A.M. Temp. of Soil at 1 ft.	IN THE DAY. Shade Temperature. Max.	IN THE DAY. Shade Temperature. Min.	IN THE DAY. Radiation Temperature. In sun.	IN THE DAY. Radiation Temperature. On grass	Rain.
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
We. 31	30.155	62.7	56.8	N.	53.8	69.8	51 8	115.8	50.2	—
Th. 1	30.063	62.3	57.5	S.W.	53.2	71.1	43.8	113 0	42.4	—
Fri. 2	30.151	54.0	47.6	N.E.	56.6	59.5	40.9	115.9	38.8	—
Sat. 3	30 200	48.4	44 9	N.	55.5	58.0	41.4	109.1	38.5	0.015
Sun. 4	29.992	51.2	48.0	N.E.	54.5	60.3	39.0	113.5	37.2	0.009
Mo. 5	30.176	56.2	49.4	N.E.	53.9	65.6	40.2	118.3	37.4	—
Tu. 6	30.079	57.1	52.4	N.	55.4	62.0	41.7	90.0	39.3	—
Means	30.116	56.0	50.9		56.1	63.3	43.0	110.8	40.5	0.024

REMARKS.

May 31st.—Dull, heavy, and storm-like till noon, then very fine.

June 1st.—Dull and stormy-looking, but getting gradually finer, fine night.

2nd.—Dull and very cold all day, slight shower between 5 and 6 P.M.

3rd.—Cold and dull, with short glimpses of sunshine, hail at 1.24 P.M.

4th.—Again very cold, with alternating sunshine and showers, a fine evening.

5th.—Still cold, but a very bright sunshiny day.

6th.—Rather warmer, though the heat of the sun was less. It shone very brightly during the afternoon, but not scorchingly; the morning was very dull and cold.

Another dry week and bitterly cold on several days. Snow fell at several places in the vicinity of London on the morning of June 4th.—G. J. SYMONS.

COVENT GARDEN MARKET.—JUNE 7.

NOTWITHSTANDING the drift of cold north-easterly wind prevailing, we have had a liberal supply during the past week, and prices have been maintained, supported principally by the large orders received from the midland-county towns, the weather favouring the transit of both fruit and vegetables. Kent Peas are freely offered, and large quantities of Potatoes are to hand from St. Malo and the Channel Islands, with heavy consignments of Strawberries and Cherries from France.

FRUIT.

	s.	d.		s.	d.
Apples.....½ sieve	2	0	to 5	0	
Apricots ..... doz.	2	0		3	0
Cherries..... lb.	1	0		3	0
Chestnuts..... bushel	0	0		0	6
Currants.....½ sieve	0	0		0	0
Black ..... do.	0	0		0	0
Figs ..... doz.	6	0		10	0
Filberts ..... lb.	0	0		2	0
Cobs..... lb.	2	0		2	6
Gooseberries ..... quart	0	6		0	8
Grapes, Hothouse.... lb.	6	0		12	0
Lemons..... ℔ 100	6	0		10	0
Melons..... each	6	0		12	0

	s.	d.		s.	d.
Mulberries..... lb.	0	0	to	0	0
Nectarines..... doz.	10	0		20	0
Oranges..... ℔ 100	6	0		10	0
Peaches..... doz.	12	0		24	0
Pears, kitchen ..... doz.	0	0		0	0
dessert..... doz.	0	0		0	0
Pine Apples ..... lb.	6	0		10	0
Plums..... ½ sieve	0	0		0	0
Quinces..... doz.	0	0		0	0
Raspberries..... lb.	0	0		0	0
Strawberries ..... lb.	6	0		10	0
Walnuts..... bushel	10	0		16	0
ditto..... ℔ 100	1	0		2	0

VEGETABLES.

	s.	d.		s.	d.
Artichokes ..... doz.	4	0	to	6	0
Asparagus ..... ℔ 100	4	0		8	0
Beans, Kidney .... ℔ 100	2	0		3	0
Broad..... bushel	0	0		0	0
Beet, Red..... doz.	2	0		3	0
Broccoli ..... bundle	0	9		1	6
Brussels Sprouts..½ sieve	0	0		0	0
Cabbage..... doz.	1	0		2	0
Capsicums ..... ℔ 100	0	0		0	0
Carrots..... bnch	0	6		1	0
Cauliflower..... doz.	6	0		10	0
Celery..... bundle	1	6		2	0
Colewarts..doz. bunches	3	0		6	0
Cucumbers ..... each	0	6		1	6
pickling ..... doz.	0	0		0	0
Endive..... doz.	2	0		0	0
Fennel ..... bunch	0	3		0	0
Garlic ..... lb.	0	3		0	0
Herbs..... bunch	0	3		0	0
Horseradish .... bundle	3	0		6	0

	s.	d.		s.	d.
Leeks ..... bunch	0	4	to	0	6
Lettuce ..... doz.	0	6		1	0
Mushrooms ..... pottle	1	0		2	6
Mustard & Cress..punnet	0	2		0	0
Onions ..... bushel	7	0		10	0
pickling..... quart	0	0		0	0
Parsley... ..... sieve	3	0		6	0
Parsnips..... doz.	0	9		1	0
Peas ..... quart	1	0		3	0
Potatoes..... bushel	2	0		4	0
Kidney..... do.	3	0		4	0
Radishes .. doz. bunches	0	6		1	0
Rhubarb..... bundle	0	4		0	0
Savoys. ..... doz.	0	0		0	0
Sea-kale ..... basket	0	0		0	0
Shallots ..... lb.	0	6		0	9
Spinach ..... bushel	2	6		0	0
Tomatoes ..... doz.	4	0		6	0
Turnips ..... bunch	0	9		1	6
Vegetable Marrows..doz.	0	0		0	0

POULTRY MARKET.—JUNE 7.

AT the time when we go to press, the signs of an increased supply are so patent, that we may safely say when this is in our readers' hands, there will be a diminution of prices.

	s.	d.		s.	d.
Large Fowls	5	0	to	5	6
Smaller ditto	4	0		4	6
Chickens	2	0		2	6
Ducklings	2	0		2	6
Goslings	6	0		6	6
Pheasants.....	0	0		0	0

	s.	d.		s.	d.
Pigeons	0	9	to	0	10
Rabbits	1	4		1	5
Wild ditto	0	9		0	10
Hares	0	0		0	0
Guinea Fowl.....	0	0		0	0
Grouse	0	0		0	0

WEEKLY CALENDAR.

Day of Month	Day of Week.	JUNE 15—21, 1871.	Average Temperature near London. Day.	Night.	Mean.	Rain in 43 years. Days.	Sun Rises. m. h.	Sun Sets. m. h.	Moon Rises. m. h.	Moon Sets. m. h.	Moon's Age. Days.	Clock before Sun. m. s.	Day of Year.
15	Th	Royal Botanic Society's Show closes.	72.8	48.2	60.5	19	44 af 3	16 af 8	31 af 2	41 af 5	27	0 3	166
16	F		72.6	48.3	60.4	18	44 3	16 8	55 2	49 6	28	0 16	167
17	S		72.9	47.3	60.1	23	44 3	16 8	22 3	51 7	29	0 29	168
18	Sun	2 Sunday after Trinity.	72.3	50.4	61.3	21	44 3	17 8	57 3	49 8	●	0 42	169
19	M		70.8	48.6	59.7	22	44 3	17 8	41 4	39 9	2	0 55	170
20	Tu	Meeting of Zoological Society, 9 P.M.	72.3	48.6	60.4	20	44 3	18 8	33 5	20 10	3	1 8	171
21	W	Royal Horticultural Society, Fruit, Floral, and General Meeting.	74.4	50.5	62.4	18	44 3	18 8	35 6	53 10	4	1 21	172

From observations taken near London during forty-three years, the average day temperature of the week is 72.6°, and its night temperature 48.8°. The greatest heat was 93°, on the 19th, 1846; and the lowest cold 30°, on the 15th, 1850, and 20th, 1865. The greatest fall of rain was 1.46 inch.

WHAT IS BROCCOLI?—No. 1.

THIS is a question which I have often asked, and I have searched for an answer, but in vain. Our old authorities are nearly mute, and our modern ones quite so, as to the definition of a Broccoli. Miller, in his "Gardener's Dictionary," hints at the close relationship between Cauliflower and Broccoli; indeed he supposes that the Broccolies of his time were derived originally from Cauliflower. My opinion is that there is no difference between some Broccolies and Cauliflowers; in fact, we speak of the Walcheren as a Cauliflower at one time, and at another as a Broccoli. Either it is a Broccoli or a Cauliflower, or there is no difference in the meaning of the words, and if so, why should not one name suffice? To have a thing called by two names is not desirable. It misleads the public, and is to the gardener a source of bewilderment. In almost all seed-lists we find Walcheren under the heading of Broccoli, and also under that of Cauliflower. This leads to the conclusion that Broccoli and Cauliflower have no distinct characteristics. But I am no believer in the identity of Broccoli and Cauliflower.

It is worthy of note that whilst we make great additions in point of names to the list of varieties of Broccoli, no great additions are made to that of Cauliflower. This tends to confirm Miller's supposition of Broccoli being derived originally from the Cauliflower, for the nearer any plant is to its original form the more permanent or true it will continue in its progeny; but a cross-bred, as the Broccoli (in case Miller's supposition is correct), must be multiplied, as it is to a great extent continually breaking into further deviations from the original. This is the case with nearly all the Broccolies of more than ten years' standing. When first sent out, and for a few years afterwards, the kind is first-class in every respect, or is all that its raiser and sender-out described it to be, but after a few seasons a great difference is apparent in the habit, hardiness, and heading of the plants. Some have the characteristics of the kind as sent out, whilst others have no resemblance; in fact, at last the kind is so degenerated as to make the grower glad to obtain something newer and more profitable. There were good Broccolies in Miller's time, no doubt. I can remember some very good twenty-five years ago, but none of those so recent as that are to be compared to the Broccoli of the present day, not more than one in ten of the old sorts coming true to name.

I am persuaded that a Broccoli, so called, sown, say, in April, and heading in the following autumn, is not a Broccoli at all, but a Cauliflower, and a variety sown after midsummer, and heading in the following summer, is not a Broccoli but a Cauliflower. A true Broccoli (and I believe there are and were such), if sown so that planting had to be performed after August, will not head in the following year, either at its proper or any season, though it may form a green—never white—open, stalky head, not unlike an open Cabbage going to seed. It is also remarkable that a true Broccoli from an April sowing kept dry and close-standing, so that the plants are not more than a few inches high, with three leaves or so, and not planted until September, will not head in the following year, but instead of that will start into growth very vigorously, becoming a giant in its way, and if left will produce immense heads in the spring, two years after sowing.

I have also noted that the seed of true Broccoli must be sown so early in spring, and the plants be planted out early enough in summer, that they may make a good growth and form heads before January, or, in other words, be perfected by the growth of the first season, so that nothing remains but the development of the heads with the return of genial weather. If, from late sowing and planting, the plants have not formed a head in embryo before the growth, from cold, becomes stationary, they will not head in the ensuing spring or early part of summer, but will, as before stated, become giants, and form very large heads in the following season, or at the same time as plants from seed sown in April or May, though frequently they form immense green heads not unlike a Cabbage and run to seed. This would indicate the origin of Broccoli to have been an open or non-hearting Cabbage, and many of the varieties after they have been long in cultivation exhibit the non-heading tendency, which Cauliflowers, to my knowledge, never do.

The difference in the time of sowing makes no difference as regards the season of a true Broccoli coming into use. Sown in March, April, or May, or from either extreme of the thirteen weeks, there is no material difference in the time of the heading or fitness for gathering or cutting. Of course there is considerable difference as regards the different kinds, but I am alluding to successional sowings of one kind—Mammoth, for instance, being, as it is in every sense, a true Broccoli—and there is no difference, except in the size of the plants and heads, between a sowing in March and a sowing in May.

A Broccoli, as I accept the term, is a hardy variety or offshoot of Cauliflower which does not head the same season as sown. Any varieties that are sown in April, and come into use in autumn, or that are sown in August, or after midsummer, and head in the following summer, are in my opinion Cauliflowers; indeed, Walcheren and Grange's Autumn, though they may have Broccoli parentage, are as much Cauliflowers as Early London, Asiatic, Stadtholder, Erfurt, or any other. The Cauliflowers keep up a succession from June to January, and the Broccoli from December to the middle of June, so that with both a supply of good heads can be had all the year round, and if we include Walcheren and Grange's Autumn (which I consider Cauliflowers), there is no difficulty in keeping up a continual supply of Broccoli without including Cauliflowers, except in very severe weather in midwinter.—G. Abbey.

THE JAPANESE HONEYSUCKLE.

In reply to Mr. Bartrum's remarks in your last number, I beg to inform him that I have flowered the Japanese Honeysuckle here for many years. I bought a plant as soon as it was sent out, in 1861 or 1862, I forget which. This plant bloomed at once, and in 1864 I mentioned the

matter to Mr. Veitch, of Chelsea. He at once said that he had never heard of its having been flowered, and asked me as a favour to send him some of the flowers to look at. Accordingly, next year (1865), I sent him a boxful of blooms, which he acknowledged, as you will see by the annexed letter, at the same time saying that to the best of his belief I was the first to bloom this most beautiful of creepers.—Fred. Walton, *St. Cuthbert's.*

"Royal Exotic Nursery, King's Road, Chelsea, S.W.
"26th June, 1865.

"I thank you very much for having kindly sent me the blooms of Lonicera aureo-reticulata. The blooms add another charm to this really pretty climber. I think you may safely claim the credit of having been the first to blossom it in this country.—James Veitch."

Your correspondent of last week being desirous to know if this plant flowers in other localities than his own, and as the subject may be of a little interest to your readers generally, I enclose you a sprig which I have just taken from my garden, and which you will see, although only 4 inches long, has sixteen bloom-buds not far from being out. The Honeysuckle, which flowered most freely last year, was planted against an arch in the centre of my garden seven years since. The arch is about 8 feet high and 6 feet wide, and the plant reached the middle of it a year or two ago. It would most likely have gone farther but for meeting a Rose tree growing up the other side. I may add that the sprig I send was taken from the north side of the arch.—Benjamin Looker, *Kingston-on-Thames.*

[Mr. Pillar, gardener, Wiscombe Park, Devon, informs us that this Honeysuckle has bloomed there in each of the three last years, and is now covered with flower buds. Mr. D. Greig, gardener to the Earl of Bandon, Castle Bernard, Ireland, that it is now in flower against a south wall, and has so flowered for three years.—Eds.]

FORWARDING STRAWBERRIES, AND LAYERING FOR FORCING.

The coldness of the weather will make Strawberries very late with us this season. To forward them a little I have had some sashes placed over a bank sloping to the south. Some 15-inch pots were inverted at the back and front, and wooden rails were laid along from pot to pot, thus forming a back and front sill for the sashes to rest upon. Boards being placed upright from the ground to the rails at the back and front, and at the ends, a good temporary frame or pit is formed. Air is given by raising the sashes with a peg.

The early ripening will greatly depend on taking all air away early, so as to shut in sun heat. In dull cold weather much time will not be gained by such means; but in bright sun the Strawberries will be from eight to twelve days earlier.

I intended a lot of pot plants set with fruit, to ripen in the late orchard house, but in order to prevent any break, I think they must be removed at the beginning of the week into a pit where a little artificial heat can be given. Some of the first-forced Keens' Seedling turned out into the ground are now showing bloom a second time pretty generally, and will thus come in soon after the usual summer crops, and will be little behind such late kinds as the Elton, still a fine Strawberry in its season, notwithstanding its acidity.

As soon as possible runners must be layered for next season's forcing. Where could time and labour now be found for cutting pegs for this purpose? I am glad to get a small box of potsherds or small stones to place on the runners—nay, glad to be able to fix each in the pot with the thumb and finger, and leave it to look after itself, which even under such circumstances it generally does very well. Where there is netting, the runner is generally rendered all the more secure when a little stone is fixed firmly over it.

It requires no argument to prove that it is advisable to take plant-runners as much as possible from fertile and productive plants. From experiments conducted carefully for a number of years, I came to the conclusion that the second plant on the runner, though not so vigorous as the first, was the most fruitful. This seemed perfectly in accordance with the great natural law, that the extreme of luxuriance in growth is opposed to the extreme of fertility. I know that some hold the opposite view, and prefer the first plant on the runner as the most vigorous and the most fruitful. I still hold the opinion expressed above, but the run of dry seasons, and having no water to spare, have forced me to act on the practice of those who differ from me, and to be glad to take the first plant on the runner, or even any young plants at all, and I must say that these plants have turned out very well. The question still remains, however, and which of late years, as stated above, I have had no means of further testing, Would not the second plant on the runner be less distinguished for its free luxuriance and size of foliage, and be more marked for smallness of foliage and abundance and size of fruit?

Next, with regard to the mode of treating the runner plant for forcing, I have tried many modes. I have taken off the runner just as it began to show the protuberance of roots, and, leaving 2 inches of the runner to help to fasten it, have pricked it out in rich soil in a bed, watered and syringed, and shaded until it was growing freely, and then raised the plants with little balls and potted them at once. As some successful forcers do, I have taken to the beds 6-inch pots, well drained, filled with rich soil to the rim, fastened a runner in the centre of the pot, and cut its string when fairly established. The only objections which I know to this mode are two—first, the labour and time involved in carrying the pots and soil to the Strawberry beds and then back again; and secondly, watering such a number of large pots, especially if water is distant and scarce. Then, again, there is the tendency in such cases for the roots to quickly reach the sides of the pots, whilst much of the soil inside is slightly permeated by small fibres; whereas in such cases I do not think that the fibres can be too numerous or too thoroughly interlaced through the whole of the soil in the pot. Hence, I recommend all beginners to layer their runners in small pots (the size called 60's), and when these are well filled with roots to cut the connecting runner, and move them at first for a few days to a shady place, watering them, then transferring the plants to larger pots without breaking the ball, the outside and inside of which is laced with fibres. When the fibres then reach and cluster round the sides of the pot, it is quite certain that the centre of the ball is filled with fibres or feeding mouths. As to the size of the pots, I have used for small kinds, and those which I wished to mature early, in order to be forced early, what are called 48 and 40-sized pots. This season, though these did fairly, what are termed 32's, about 6-inch pots, answered the best.

Then, though stating what most likely will appear mere reiteration, still for the benefit of inquirers I may remark, that several things more are important in the way of preparing the plants for forcing. First, The soil should be somewhat rich and stiff, rather than sandy and light. Second, In potting, as the plant will sink a little, the bud should not be lower than the rim of the pot; and the soil round the sides cannot be packed too firmly, using a blunt spatula, or piece of wood, for the purpose. Thirdly, A little shade may be wanted at first, but full exposure to the sun as soon as possible, and the pots to be set on a hard bottom that the roots may be forced back on themselves instead of encouraged to pass out at the bottom of the pot. Any runners should be nipped off as they appear, and the pots should not stand so closely together as to prevent the sun and air acting freely on their buds. Fourthly, Waterings and syringings of clear water may be used as needed, until the roots come pretty freely to the sides of the fruiting-pots, and then weak and diversified manure-waterings will be relished, no flagging ever being allowed. Lastly, As the short days and waning sun of autumn come, give no more water than is absolutely essential to keep the plants from being distressed, the ripening of the buds being then of more importance than mere growth. If it can be done, not only the pots but the plants should in winter be protected from heavy rains and severe frosts. When starting, the rise to about 60° should be gradual. These hints are chiefly for the benefit of beginners who wish for an outline of the course they had better follow. —R. F.

NOTES ON ROSES.

It is too early at present to describe the infants, as is desired by your correspondent "Spectator." Even some of the old-established Roses have not bloomed yet in their character. Among the old Roses blooming abundantly and first-rate are Gloire de Dijon, Céline Forestier, Empereur de Maroc, Prince Camille de Rohan, Maurice Bernardin, Jules Margottin, the best-habited of all Roses; John Hopper, Felix Genero, and Marguerite de St. Amand. Others, as yet, have exhibited green centres and fimbriated edges. Madame Trifle (Tea), Louis Van Houtte, Baron Chaurand, and one or two more, have died. I shall be able to describe in a short time the following:—Madame Chirard, Madame Creyton, Mdlle. Eugénie Verdier, Madame

Jacquier, Jules Chrétien, Nardy Frères, Souvenir de Monsieur Poiteau, Marquise de Mortemart, Edouard Morren, Perfection de Lyon, Souvenir de Monsieur Boll, Dupuy-Jamin, Madame W. Paul (Moss Perpetual), Madame Alice Dureau, Paul Néron, Abbé Giraudier, Albion, Monplaisir (Tea), and Madame Levet.

I have re-introduced Madame Guinoisseau (twelve plants), a Rose that never ought to have gone out, being equal in form and beauty to Madame Vidot and Madame Rivers; and I have also bought six plants of Triomphe de Caen, deep purple, which is coming into abundant bloom, and appears to be an acquisition. It has been "out" some years, but the *savans*—fast coaches—do not always find out the jewels. I shall know more about it in a few days, as every twig has a Rose on it. I think Perfection de Lyon will be first-rate. I have had one first-class bloom of it, and the six plants have an abundance of buds to judge from. I do not much like judging from one plant or one bloom. I agree with my man "Steevie." "Sir," said he, the other day, "we cannot tell for certain what the Roses are till we have had them two or three years." These cold nights and cutting north-east winds cause the first buds to bloom abnormally. Pull off at once all defective and green-centred buds.

Mr. Duddendge, foreman at the Dorset Nurseries, sent me for inspection some fine blooms of Catherine Mermet, Madame Hippolyte Jamain, and Rêve d'Or. The last is a great beauty and of good form. It is a golden yellow, with a cupped coppery yellow centre. The following is his report of it—"Rêve d'Or is a moderately rapid climber and is covered with blossoms; it does not make long unsightly shoots, but covers the wall as it grows. I think it is a fine variety. It is particularly good in bud or half open."—W. F. Radclyffe.

EARTHING-UP POTATOES.

On this subject I am quite of "Wyeside's" opinion. I never have my Potatoes earthed-up, as I am sure it greatly injures the fibres, and, therefore, weakens the crop. I always have an excellent crop; this year under a new system it is better than usual. I always have the ground dug two spits deep in the autumn, turning-in plenty of well-decomposed manure.

The method which I have adopted this year is as follows:—With a broad hoe I draw trenches about 4 inches deep, I then dibble holes in the trenches and plant the Potatoes, thus leaving a ridge of earth between the rows. As soon as the tops are 4 or 5 inches high the ground is hoed, levelling-down the ridges and so affording support to the plants. With the exception of hand-weeding nothing more is done, as I believe hoeing afterwards to be very injurious, for it disturbs the roots which are between the rows.

This year I began to take up my Potatoes on May 27th, and I am well pleased with the crop, many of the tubers weighing a quarter of a pound. My neighbours, notwithstanding, go on earthing-up their Potatoes and destroying half their crop.—A. F. Godward, *Southend*.

I believe that "Wyeside" has introduced a question which should be the subject of experiment by all Potato-growers. I am no advocate for earthing-up Potatoes, and I did not practise it during the several years I was at Lillesden. I have frequently stated to several growers in that neighbourhood my reasons, which were in substance similar to those given by "Wyeside." Advocates of the earthing system say that it increases the crop by causing the plant to put forth roots up the stem, and therefore young tubers. I could never find that the crop was either increased or improved by earthing-up. My experience goes so far as to prove that a grower of Potatoes places himself at a disadvantage by the earthing-up system, for by earthing he increases the vigour of the haulm, and of course prolongs the time of ripening, a thing to be avoided in these times of blight, &c. Again, every grower knows that the Potato has made and extended its roots over a large space of ground before the top is high enough to be earthed; therefore it is impossible to perform the operation without injury; neither can he crop his ground so closely, nor clean it so well, as when he does not earth up. There is no need of means to increase the vigour of the haulm of the Potato, for I have not yet grown any sort that does not produce an ample top-growth even in ordinary-stapled soils.

I feel sure that the ground for Potatoes should be trenched, but not manured with farmyard manure; this should be given to some previous crop. Plant about 6 or 8 inches deep, and during growth frequently stir the surface soil, but disturb the roots as little as possible, and use every means to secure early-developed tubers, well ripened, and take up the crop; the disease is then less likely to attack them.

Many years ago, and when the Potato disease was less prevalent, it was the custom to leave the Potato crop in the ground until November; perhaps then a little earthing-up would be an advantage as a means of keeping them drier and safe from early autumn frosts, but even then the earthing should not be performed until after the crop is matured. I do not say that good crops of Potatoes are not grown by the earthing system—quite as good as by the non-earthing plan—but I am quite convinced that under the circumstances in which Potatoes have now to be grown, earthing them up according to the long-existing custom does the crop no good whatever, and is labour in vain.

As I do not earth-up Potatoes I grow my crops in rows 18 or 20 inches from each other, and the sets 1 foot apart in the row—that is, for short-topped or early sorts; but for coarse-growing later sorts, such as Paterson's Victoria, I allow from 20 to 24 inches between the rows without earthing, and have done so for several years with satisfactory crops.

Again, as a proof of the fallacy of earthing-up Potatoes, we have only to observe the wonderful crops turned out of frames and pits where they have been growing at a distance of less than 1 foot apart, with only 2 or 3 inches of soil over the tubers. Nothing could be more generally satisfactory. I have been sending to table some Myatt's Prolific so grown since the first week in April, and for size and finish, as well as flavour, they would come up to a summer-grown Potato.—Thos. Record.

In the first place, I would say it is injurious to earth-up Potatoes at a wrong time. In my opinion the proper time to do so is when they are 2 or 3 inches high, not during an advanced stage of their growth. According to my experience, I never found earthing-up interfere with their growth, but on the contrary increase it; nor can I see that either the plough or the hoe, if properly used, would interfere with the roots at this stage; and even if the ground is dry when the operation is performed, it does not follow that it will always be so. There certainly are exceptionally dry summers; but I can assure "Wyeside" that there are certain soils which have come under my observation where he could not or dare not earth-up while they were in the dry state he mentions; and this is only another illustration of the truth, that what is right for one man may be wrong for another.

I am not prepared to prove that the yield is increased by earthing-up, although my experience tends to that conclusion, still I am prepared to prove that earthing-up certainly preserves the tubers in a better condition, also from the ravages of rooks. If these depredators are at all plentiful in "Wyeside's" locality, and if he grows early Potatoes in considerable quantities, he will find out that it is absolutely necessary to earth well up. It may be all very well for the rooks that the tubers should be exposed, but I think it would be wrong for me to have to get up at 3 or 4 o'clock A.M., to scare and shoot them, or otherwise lose the best of my crop. I find the best tubers are nearly always near the surface.

"Wyeside" apparently makes light of the greening, but I am mistaken if he will find it so. A few years ago I had about three acres of Potatoes that were not earthed-up, and I was mortified at having to waste so many fine tubers as unfit for use, especially as there were plenty of smaller ones not the least affected for sets; the greater part of the larger tubers were near the surface.

Now, with respect to the yield, I quite concur with the Editors' remarks, that earthing-up retards the ripening. About ten days or a fortnight ago I wanted a dish of early Potatoes. I went first to some Potatoes that had fine strong tops, but was disappointed to find tubers about the size of Peas. These had been earthed-up. From a few plants that had never been touched after they were planted, but had short tops half the size of the others, I obtained a beautiful dish about the size of pigeons' or bantams' eggs. The soil about these was hard and solid. All were planted at the same time. The plants with the large tops showed twice the number of tubers. This may not be a fair comparison, as both pieces were not on the same ground, but to me there does not appear to be any difference between the two, save in the hard texture of the one and openness of the other. I have my own views about the reason why

there is such a difference, but I would prefer first to know if others have had a similar experience.—A Yorky.

PLANTS SUITABLE FOR TABLE DECORATION.

ÆCHMEA FULGENS.

Among the many varieties of plants suitable for dinner-table decoration the Dracæna as a fine-foliaged plant is worthy to stand first; and out of a great number of flowering plants which I have tried, none have been more pleasing than Æchmea fulgens. Its rich green foliage and handsome form make it attractive when in its growing state, but when graced with its spike of coral-like flowers it cannot but be admired by all who see it. If you have an old plant by you it will be very little trouble to increase the stock; if not, in making a purchase it is best to get two plants, no matter how small, so long as they are rooted and are both the same size. If they have not filled their pots with roots allow them to remain in them until they have, but at the same time be careful not to let them get pot-bound; then shift them into the size of pots you use on the dinner table—4 or 5-inch are large enough, and are the size I use myself, but a size larger will do them no harm. The soil should be two parts peat, one part fibrous loam, one part thoroughly rotted cow dung, with a good sprinkling of silver sand. Let this be well mixed together, but not rubbed, as the soil ought to be in pieces about the size of Spanish nuts. It is a good plan to water the young plants thoroughly, if they are dry, about an hour before you shift them into larger pots, and then after they are potted let them stand two or three days before you water again; and if it is winter time they may stand a week or ten days before they require water. The pots should either be new or washed clean and well dried, as no plants thrive well in dirty pots. If the pots are new they should be dipped in water, as pots fresh from the potteries, if not wetted and allowed to dry, slightly slack when the plant is watered for the first time, and this is not good for the roots. The plants will now require very little water, except what they get by syringing. I have sometimes let them stand all winter without giving water more than once or twice; but as soon as the plant begins to show its flower-stem, it will require water whenever the soil gets dry; if not, the flower will be small. The plant should occasionally be inverted, to let out the water which is sure to lodge in its heart when the syringe is used. This should be done by placing the neck of the plant between the fingers, with the rim of the pot resting on the hand: by this means you will prevent the soil from falling out of the pot.

About the time the plant is in full flower, young shoots will make their appearance at the neck of the plant, and when these have grown to about 5 or 6 inches long, they may be cut off close to the parent with a sharp knife, and placed in the middle of a thumb-pot, using a mixture of peat, leaf mould, and silver sand, in equal parts, and they will very soon root and make nice young plants, which can be shifted as soon as they have filled their pots with roots, using the soil described above. When the old plants have done their best, they may be thrown away to make room for young ones; or if a number of young ones are wanted, they may be cut down, and they will soon send up three or four suckers, which may be parted with roots to them; or cut off and struck, whichever is preferred. The cuttings will strike in the stove or in a warm dung frame.

It is a good plan to take three or four cuttings whenever you can get them, as then you will have plants in flower at different times of the year. Last year I had plants in flower from the last week of July until the last week in December. They came into flower in succession, at intervals of about a fortnight. And now some cuttings that were struck in May will, I have no doubt, flower by April; and some more that were struck in September have grown considerably, and will most likely flower by May or June; and plants struck in February and March will flower in the following August and September. So by taking a few cuttings all the year round, you may be sure of plants fit for table decoration almost whenever they may be required. And should they not be required for table decoration, their beauty, and the length of time they flower, will amply repay the trouble.—William Nokes, *Blake Hall, Ongar, Essex.* —(in *The Gardener.*)

Heavy Peach Crops.—The large Peach shipments of 161,968 packages of Peaches from St. Joseph, Michigan, during the season of 1870, have been quoted by Western papers, and also some foreign ones, as the "largest known to the present generation." We must give better credit to little Delaware, by saying that from one station alone, on a railroad 175 miles long, there were shipped from Middletown, Delaware, last year, 175,000 baskets and packages of Peaches, and from the town of Dover there were shipped, both by railroad and steamer, the enormous amount of 460,000 baskets. The produce of the entire peninsula of Maryland and Delaware was 3,000,000 baskets, and the value nett to the growers about 1,200,000 dols.! Is there any other section of the world that can make as favourable an exhibit as this?—(*Horticulturist.*)

STRAWBERRY PROSPECTS.

I have read very interesting remarks on this subject during the last few weeks, and the writers seem desirous of information from others interested in the cultivation of the Strawberry. When I read the remarks of "R. F." I felt a little anxiety for the time being, but that gradually wore away.

I have had heavy crops of Strawberries during the last fifteen years, but last year the produce was not quite so heavy as in previous seasons, still I had plenty for my employer's use and some to spare. All my beds at present are very promising. We have three plantations; I destroy the oldest plantation every year, and I make a new one of the same size. The varieties which I cultivate are all old proved kinds—viz., Black Prince, Keens' Seedling, Myatt's Queen, Alice Maude, Sir Charles Napier, British Queen, Admiral Dundas, and Sir Harry. The last-named variety is a very heavy cropper with me. I have frequently gathered fruit as large as a pigeon's egg from plants bearing heavy crops as well.

Previous to making a new Strawberry plantation I dig deeply and use plenty of rotten leaves and manure, equal parts of each, and I frequently give a surface-dressing of soot or lime, just as I may happen to have it at hand. The first runners which I can obtain I take up carefully with a trowel from between the rows of the Strawberry plants, and I am particularly careful to have the young plants lifted with all the roots and the soil that adheres to them, with as little disturbance as is possible while removing them to the new plantation. As the planting is carried on I give each plant a thorough soaking of water, and should the weather continue dry after planting I water for a few evenings to give the new plantation a good start. After the plants are fairly established in their new quarters I give no more water, even if the season be as dry as that of 1870. I never water fruiting plants.

From November to March I give all my beds, young and old, a good dressing of dung and leaves, and dig it in about 2 inches deep. As soon as the flower-stems are perceptible I lay just enough fresh stable litter round each plant to keep the fruit clean. The litter, being laid on early, sweetens before the fruit ripens, and at the same time prevents so much evaporation as would take place were the litter used at a later period. —Monmouth.

MIGNONETTE CULTURE.

[The following is in answer to several inquirers who wish to grow Mignonette for exhibition.]

Sow two seeds in a 3-inch pot, placing them about half an inch apart, and cover them with fine soil about one-eighth of an inch deep. The soil should consist of light fibrous loam two parts, and one part of leaf soil, with half a part of silver sand, and the same proportion of charcoal not larger than a pea, the whole well mixed. Water gently, and place the pots in a hotbed of about 70°, shading until the seedlings appear, and then remove the shading, and elevate the pots so that the plants may not be nearer the glass than 3 inches, nor farther than 6 inches from it. Keep the soil just moist, sprinkle overhead every afternoon about 4 P.M., and close the frame, for I presume it is convenient to have them in such for a time, and when the plants are an inch high remove them to a cold frame, setting them on inverted flower pots, so as to bring them about 6 inches from the glass, calculating from the tops of the plants. The lights should be drawn down about 6 inches by 7 A.M. in clear weather; at 4 P.M. water, if required, and sprinkle overhead, shutting up for the day. If the weather is cloudy and showery draw off the lights altogether, and employ them only in case of very heavy rains, and then tilted at the back and front so as to admit abundance of air.

When the roots are slightly matted round the sides of the pots shift into 4½-inch pots, not placing the plants deeper in the soil at this nor any subsequent potting than they were at

first. The soil at this potting may consist of light loam from turves not more than 1½ inch thick laid up for six months, or, failing such, fresh turf will do. If it is fresh, place it in an oven for half an hour, turning it over once, so as to get rid of wire-worms and other vermin. It should be a good, rich, light loam. Of that two parts chopped up in pieces about half an inch square, brown sandy peat one part, old cow dung, served the same as the loam to get rid of grubs, one part (old dry hot-bed manure will do), one part charcoal, in pieces from the size of a pea to that of a hazel nut, and one part silver sand, the whole well mixed and incorporated. Drain the pots well, but not excessively, and place about half an inch deep of half-inch bones over the crocks. This will suit the plants in all after-pottings. Make choice of the best plant—the strongest, most sturdy, and close-jointed, cut away the others when they are about 2 inches high, pot in from 4½-inch to 7-inch pots when the roots reach the sides of the pots, and continue the sprinklings overhead every evening, and at this stage early in the morning as well. The watering should be moderate, not giving any water until the soil is dry, but a good supply before the leaves flag. In the case of the plants, from growing, getting too close to the glass, withdraw the pots they are set on, and place them on coal ashes, rough rather than fine, and when they grow too tall for the frame raise the frame by means of bricks under the corners, and this will admit plenty of air without withdrawing the lights in showery weather. In very bright hot weather keep on the lights and afford a slight shade from bright sun.

The last shift should be given as soon as the roots reach the sides of the 7-inch pots, shifting the plants into those 9 inches in diameter, and give this time about an inch of half-inch bones. The plants should have the first flower-spike pinched out as soon as it appears, and a neat stick put in to keep it erect. Train up a shoot as leader, and do not stop the side shoots until they show flower, and then take out the bloom wherever it appears until a month before the time at which you wish to have it in flower. The side shoots may be tied out, or rather down, and brought in the direction of vacancies, so as to form a close symmetrical plant well furnished to the pot. About a fortnight after the last potting liquid manure may be given twice a-week, but it must not be strong. A peck of sheep's droppings to thirty gallons of water well stirred up before use is the best we know. The tyings should be done neatly, and with thread, using no stick except for the central shoot or main stem. In tying, be careful not to break the shoots. To bring the shoots down you will need to place a wire or string beneath the rim of the pot, which, with the strings used for a time to give the side shoots the required direction, may be removed when that is effected.—G. A.

LOXFORD HALL,

THE RESIDENCE OF F. WHITBOURN, ESQ.

I OFTEN have the pleasure of meeting Mr. Douglas at the various exhibitions, and have a wholesome dread of him when I see that he is a competitor, for he is one of those gardeners who do nothing by halves; he is so thoroughly up to the mark in all departments, that you may be pretty sure, if you enter the lists with him, to come off with some broken bones. When, therefore, in answer to his oft-repeated wish I went down to see the garden he superintends, I was quite sure that I should see things well done, and I was in truth amply repaid.

Loxford Hall is not, as perhaps one might be led from its name (a name not given by its present owner) to suppose, a lordly mansion, standing in the midst of a grand park and surrounded by all the et-ceteras that "English luxuriousness," (according to General Trochu), can supply. No, it is a plain simple villa near Ilford, Essex, standing in the midst of a good acreage of farm, and by the great multitude of people would be passed by as not having any features of peculiar interest; but to anyone instructed in horticulture you have only to pass into the garden, and you at once see the marks of a master hand. The garden owes all its value to the contents and not to the surroundings. It is perfectly level, and was a few years ago simply a piece of meadow. The houses, which are numerous, were not built on any special plan, and were run up at different times, so that there is no continuity, and there is consequently need of more care and attention on the part of the gardener than where a one-boiler system and long range of houses exist.

In fruit Mr. Douglas has long taken a foremost place, and the vineries showed evidence of the successful treatment that has enabled Mr. Douglas to take such a prominent place. There were splendid bunches of 4 and 5 lbs. weight of Black Hamburghs; then there were Royal Ascot, Golden Champion, Mrs. Pince, Barbarossa, and many others, and a seedling which I think is likely to prove a valuable variety, a cross between Buckland Sweetwater and a Frontignan, a cross-breed having the large berries of the one parent and a very decided Frontignan flavour. We shall hear more of this Grape, I am persuaded, by-and-by. In another house in the kitchen garden there is a Muscat of Alexandria which is somewhat remarkable. It was on a wall outside and was brought into the house, and the space in which its roots can travel is very circumscribed, yet it had some magnificent bunches and always does well.

Mr. Rivers might quote Mr. Douglas as a successful champion of orchard-house culture. The house has hot-water pipes in it, and can thus at the critical period have the extra heat which is often needed to set the fruit, the point in which I have ever felt the unheated orchard house was defective. Nothing could exceed the healthy appearance of the trees, while a plentiful crop of Peaches and Nectarines showed that there was profit as well as beauty. All around shelves near the glass were filled with Strawberries in pots, and here the fragrant perfume clearly indicated how well they were cared for. Various kinds were used for this purpose, and among them one of M. Souchet's which I had not before seen. There were besides La Constante and President Wilder of De Jonghe, Cockscomb, Dr. Hogg, and President, and in all cases the fruit was well grown and colouring well; and whatever may be the habit of La Constante out of doors there is no doubt, from what I saw here, that it is well suited for pot culture.

In the flower garden Mr. Douglas has managed to combine the requirements of a home like this with the love of a florist. While he grows Azaleas, Pelargoniums, Orchids, stove and greenhouse plants, and grows them well, he also grows the Gladiolus and Chrysanthemum, and his flowers of both have taken prominent places on the exhibition table. I quake when I see him putting up his stands of Gladioli, and I am sure, from what I saw of his Chrysanthemums at Kensington last autumn, exhibitors of that flower must do the same. His Gladioli looked well, and he has a large number of seedlings from carefully fertilised flowers, which ought to produce something. It will be recollected by some that he exhibited last year a very fine seedling for which he gained a first-class certificate, and which went into Messrs. Standish's hands. Most of his Chrysanthemums were grown for single stems, and by this means he obtains some very fine flowers, few in number of necessity, but very fine in quality. There were also here some of the very finest plants of Lilium auratum that I have anywhere seen, stems producing twenty and thirty blooms a-piece, and some eight to ten of these in a pot. Mr. Douglas has detailed his mode of culture in THE JOURNAL OF HORTICULTURE, and I need only add that he grows them mainly in Wanstead loam, and plunges them out of doors during the winter, and thus obtains hardy well-constitutioned plants. These large pots contain the produce of a single bulb, the bulbs being simply pushed away from each other so as to partly separate them.

In vegetables, too, Mr. Douglas has shown himself an able cultivator, the seedling Cucumber he exhibited last month being a very fine variety; while a walk through the kitchen garden, where he has Peas, Potatoes, and other vegetables on trial, will show much that anyone interested in this most useful part of the garden will be pleased with. He has often told me that he cannot grow the Lapstone Potato, but I very much question from what I saw whether he has it true.

I have said nothing of the bedding-out and other more ordinary matters, but simply have noticed those points which struck me most. Mr. Douglas has some difficulties to contend with, but he has one great advantage in having in Mr. Whitbourn a kind and considerate employer, who, believing that a man whose profession it is to be a gardener must know what is best to be done, is willing to trust him. Surely if there were more of this feeling there would not be so many complaints, and for both the employer and employed there would be great advantages.—D., *Deal.*

PRESERVING WALKS FROM WEEDS.

To aid your correspondent "IDEM" to prevent weeds from growing on his paths, allow me to suggest spent lime from the gas house as very suitable in his case. It is put on the last coat of stones just before the gravel, and is merely shovelled on to the stones and spread evenly over. For a path 3 or 4 feet wide, about 3 inches in thickness would be sufficient.

It is not an absolute preventive, but our paths have been made seven or eight years, and have required up to the present time very little weeding. I do not recollect what I paid for the lime—a merely nominal sum, if anything. If I were going to make new paths I would not omit the gas lime on any account. —Amateur, *Cirencester.*

ROYAL BOTANIC SOCIETY'S SHOW.

June 14th and 15th.

The second great Show of this Society opened yesterday and will close this day. Like its predecessor at Kensington it is fairly good, but presents no remarkable points of interest. Are exhibitors becoming tired of the great frequency of shows? We have not heard any outcries, but results would lead to the belief that such is the case.

In the floral department Messrs. Lee, of Hammersmith, have a very effective mixed group, and others come from Messrs. Carter & Co., and Messrs. Rollisson, of Tooting.

In Stove and Greenhouse Plants Mr. Baines, as usual, takes the highest place, being first both for nine and six, exhibiting, among others, large and superbly grown specimens of Hedaroma tulipifera, Erica Cavendishii, Erica ventricosa minor, Anthurium Scherzerianum, together with fine examples of Boronia pinnata and the charming bright-coloured Dipladenia amabilis. Mr. Ward comes second for nine, and Mr. J. Wheeler third, and second for six, Mr. Carr being third in the latter class. In the nurserymen's class Messrs. Jackson, of Kingston, and Mr. Morse, of Epsom, each exhibited.

Orchids are but few; by far the best come from Mr. Williams, of Holloway, who has magnificent examples of Cattleya lobata and Cypripedium caudatum, Aërides affine with ten racemes, Cypripedium barbatum, and Saccolabium retusum. Mr. Bull, who is second in the nurserymen's class, has the new and pretty Thunia Bensoniæ, Odontoglossum citrosmum, Vanda tricolor, and Lælia purpurata. Among amateurs the awards go to Mr. Ward and Mr. J. Wheeler for nine; and to Mr. Burnett and Mr. Hill for six.

For Show Pelargoniums Mr. Ward, gardener to F. G. Wilkins, Esq., Leyton, is a long way first with truly magnificent specimens, some of which were quite 4 feet across, and all of them in splendid bloom. The kinds are—Fair Rosamund, Selina, Conquerer, Rose Celestial, Patroness, Lilacina, Mary Hoyle, Conflagration, and Desdemona. Mr. Weir, gardener to Mrs. Hodgson, Hampstead, is second; and Mr. James, gardener to W. F. Watson, Esq., Isleworth, third. In the nurserymen's class Messrs. Dobson are the only exhibitors.

In Fancy Pelargoniums Mr. Weir sends a fine plant of Miss-in-her-Teens, and Liberty and Multiflora good; while in the nurserymen's class Messrs. Dobson have good plants of Marionette, Lucy, &c. For twenty distinct kinds the prizes go respectively to Mr. Turner, of Slough, and Messrs. Dobson, the former having many very fine varieties.

Of Tricolor Pelargoniums excellent plants are shown by Mr. Stevens, of Ealing, Mr. Turner, of Slough, and Messrs. E. G. Henderson & Co.

Roses in pots from Messrs. Paul & Son include large specimens, in beautiful bloom, of Paul Perras, Maréchal Vaillant, Lælia, and Charles Lawson. The same firm also exhibit a mixed collections of standards and dwarfs, and a fine miscellaneous group.

Of fine-foliaged plants, Mr. Baines has Gleichenia rupestris, large and in beautiful condition; Theophrasta imperialis, a magnificent Phœnicophorium sechellarum, Sarracenia flava, very fine; and Dasylirion acrotrichum. Mr. Baines took the first prize; the second went to Mr. Taylor, gardener to Mrs. Yates, Highgate, who has a fine specimen of Encephalartos latifrons. Mr. Burley, Bayswater, came in third. Mr. Cole, gardener to S. Budgett, Esq., Ealing Park, has also excellent plants, and two fine examples of Lomaria gibba shown before. Mr. Williams has three noble examples of Chamærops humilis, Latania borbonica, and Areca lutescens, taking the first prize for three Palms, and Mr. Burley is second.

Among cut flowers the Roses are the majority. Maréchal Niel, from Mr. Keynes, of Salisbury, and R. Webb, Esq., Calcot, is in splendid condition, and the same variety from Mr. Mitchell, Piltdown, large and of exquisite freshness and colour. Mr. Keynes also sends beautiful blooms of Climbing Devoniensis, and Mr. Webb a stand of the seldom-shown Persian Yellow. Mr. Mitchell, Mr. Keynes, Mr. Chard, and others, have fine stands of different varieties.

The following first-class certificates were given for new plants—viz., to Messrs. Veitch, Chelsea, for Begonia intermedia, Draczena amabilis, D. Wiscmannii, Dieffenbachia Bansei, Selaginella sp. Japan, Paullinia thalictrifolia, and Linum campanulatum; to Mr. Williams for Adiantum asarifolium, Restrepia antennifera, and Agave Ortgiesiana; to Mr. Bull for Phormium tenax albo-variegatum, Ptychosperma regale, Cycas elegans, Thrinax elegantissima, Macrozamia Fraseri, and Warscewiczella velata; to Mr. Parker for Tacsonia Buchanani; and to Messrs. Paul & Son for Cupressus Lawsoniana alba pendula.

Certificates were given to the following Pelargoniums—to Mr. Nye for The Bride and Rubens; to Messrs. E. G. Henderson for Zonals Alice Maude Mary and Bronze Queen; to Mr. George for Polly King, Flame, and Caven Fox; to Mr. William Paul for Sir C. Napier, Ianthe, Lady D. Nevill, Comtesse de Flandre, and Wellington.

Fruit.—The show of fruit even for this time of year is small—a circumstance the more to be regretted as we have so few shows near London at which fruit takes a prominent part.

Of Pine Apples there were only four, Mr. Ward, gardener to T. N. Miller, Esq., Bishop Stortford, showing a splendid Queen of 5½ lbs.; Mr. Benham, gardener to H. Woode, Esq., M.P., one of 5 lbs., also remarkably fine; and Mr. Godfrey, gardener to J. Anderson, Esq., Ankerwycke, Staines, a heavy and well-ripened fruit, rather large in the crown. The prizes went to the exhibitors in the order in which they are named. The only exhibitor in the class for any other variety is Mr. Ward, who has a Blood Pine of 4 lbs. finely coloured. For this a first prize was given.

Green-fleshed Melons consist of Wilson's Hybrid, Hybrid Cashmere, Emperor of the West, Sultan, and Champion. In scarlet-fleshed, Gem is the kind principally shown. Mr. Ward is first in both classes.

Of Grapes, excellent baskets of Black Hamburgh are shown by Mr. Osborne, Kaye's Nursery, Finchley, and Mr. Hick, gardener to C. Scholfield, Esq. Muscat of Alexandria, exceedingly good and fairly ripened, from Mr. Davis, Fryern Barnet, took the second prize, Mr. Osborne and Mr. Hick being respectively first and third. For Black Hamburgh Mr. Benham was first with large bunches, Mr. Excell being second with well-finished bunches of ordinary size. Mr. Davis, Fryern Barnet, and Mr. Lane, gardener to J. Miles, Esq., are third and fourth. Very good examples of Black Prince come from Messrs. Benham, Hick, and Ritchie. Three beautifully ripened bunches of Buckland Sweetwater are first in the class for white Grapes. These come from Mr. Reid, gardener to L. Huth, Esq., Possingworth, Sussex. Mr. Pizzey, gardener to Sir E. Perry, is second with Royal Muscadine, and Mr. Davis third with fine bunches of Muscat of Alexandria tolerably ripe.

The best two dishes of Peaches come from Mr. Browne, gardener to Earl Howe, Gopsall, being large and splendidly coloured fruit of Grosse Mignonne, and Royal George, also very fine. Mr. Osborne is second with the same kinds, also very fine; and Mr. Davis third with Violette Hâtive and Grosse Mignonne. In Nectarines Mr. Browne again takes the lead with Elruge, very fine, highly coloured, and Hunt's Tawny. Mr. Holder, gardener to W. Childs, Esq., Keymer, is second with good fruit of Roman and Brugnon; Mr. Wright third with Elruge and Violette Hâtive.

Strawberries are few, and altogether inferior, the first-prize single dish of Sir Charles Napier from Mr. Chard being the best.

In the miscellaneous class Mr. Turner exhibits fruit of Frogmore Early Bigarreau from the open wall; Mr. Reid, Brown Turkey Figs and Physalis edulis, the latter pretty to look at, but to be partaken of cautiously by dyspeptics. Scoly-qua Cucumber, 4 feet 4 inches long, comes from Mr. Godfrey.

I WILL TRY.

If our cottagers generally would only adopt this maxim, how very different many of their roadside dwellings would be in their outward appearances.

I lately visited a poor man's cottage where I had been delighted to see its windows filled with nicely-bloomed plants of easy culture and little expense. Opposite this cottage there is a wall 7 feet in height, and 2 perches in length. Against this wall are growing five plants which would do credit to any gardener; the wall is gradually being covered by these five plants. The first is Pyrus japonica in good style; the second is Baronne Prévost Rose blooming profusely; the third is Gloire de Dijon with seventy-three blooms, most of them of the largest size I have ever seen; the fourth is Charles Lawson, and a good competitor in size and number. The fifth is a Cotoneaster nicely trained, as all are, in the fan-form. The Gloire de Dijon Rose has been very much admired, and my experience of it has led me to believe it to be one of the best Roses in cultivation, but with a slight exception as to its colour. It strikes easily from cuttings, and its fine foliage is almost evergreen. Moreover, it requires but little knifing as a wall or pillar Rose.

It is to be regretted that gentlemen and their gardeners do not lend a more helping hand to the cottagers in their respective neighbourhoods. A very few plants of easy cultivation would adorn the poor man's cottage and delight its inmates. The expense of such aid would be but little, and in some cases nothing, and there would be but little trouble to the gardeners to rear a few plants, &c., for each cottage. If such inducements were offered to the cottager class, and more horticultural information given them, there would not be so many dead walls and unsightly windows to be seen in numerous otherwise nice cottages.—A. Lawler.

FRUIT GROWING COMMERCIALLY.

[The following is from a paper by Mr. John Robson, Linton Park Gardens, read at the meeting of the Maidstone Farmers' Club on April 20th.]

It is not without some reluctance that I now address myself to a subject, the nature and details of which must be so well known to many that are present, that I fear much that I have

to say will appear only what is the everyday practice of the neighbourhood: yet I am in hopes some of the views I may have an opportunity of putting forth may contain something that is not generally understood, and, perhaps, some of the ideas may have the claim to originality; at the same time I must, at the onset, disclaim all merit that way, but merely the privilege of narrating such facts and opinions as I have come in contact with in witnessing the cultivation of the class of objects which forms the subject of this evening's discussion, which, I may here remark, is not confined to the county of Kent. At the same time it must be fully understood that in accordance with suggestions, the paper is expressly written with a view to place the cultivation of fruit for market purposes in its true and proper light, so as to expect a fair and reasonable profit on the outlay incurred. I deem it right to mention this, because in the remarks that will be made it may be thought that I have omitted many requirements that tend to a successful issue, but where a crop has to be bought before it is produced, as too often has been the case where a too-extravagant expenditure has been first of all incurred, it is needless to say that disappointment is the result. Under these circumstances, we will suppose that the subject of growing hardy fruits to supply the metropolitan and other markets is under discussion, and that only such prices as are realised there in an ordinary way are expected. Let us see how this is to be accomplished, bearing in mind the competition that already exists in the trade, both at home and with the foreigner; the consignments from the latter, especially, being a matter so difficult to calculate upon, that we dismiss it here, but may revert to it again in the course of this paper.

Assuming, therefore, that the cultivation of the ordinary hardy fruits that are grown in large quantities to be the subject in hand, it may perhaps not be known to all present that these fruits (with the exception of Cherries, perhaps), are all British fruit, properly speaking—that is, they are the offspring of fruits found wild in this country; the Crab, Bullace Plum, and a coarse representative of a Damson are common enough, but the Black and Red Currant, as well as the Gooseberry, are more sparingly met with; and when they are, it is often apparent they have been outcasts from some garden; yet I have found a wild Gooseberry and Red Currant a long distance from any dwelling-house or cultivated garden in Yorkshire, which I think might be truly called wild, the fruit also being of a very inferior kind, so that it is possible they might claim a home there as well as the Bramble and Hawthorn. But I will not pursue this subject further than to say that the Black and Red Currant so found in a wild state were not both together, the former occupying a much moister site than the latter. This significant fact I would like especially to call your attention to, as it may be adverted to when the cultivation of these fruits for commercial purposes comes to be dwelt upon. The conditions under which the other fruits are found when in a wild state are too well known to require comment here, and for that of one of them, Pears, I am far from certain where to look, although in its normal state the Pear is unquestionably found in many places; but we need not inquire further into that at present. If we inquire into the history of most of these fruits, we shall find that, although they are originally natives of this country, we have at various times been indebted to the cultivators of the continent for the improved varieties furnished to this country, Flanders standing pre-eminent for its fruit culture in the middle or dark ages, and who can say but that the industrious artisans driven out of that country by religious persecution in the fourteenth the fifteenth centuries, did not bring with them their Apple, Pear, and Cherry trees, and finding a home in this country equally adapted for these trees as for themselves, both became located here? Be this as it may, certain it is that many valuable additions to our orchards were obtained from that country, and possibly others from North-western France, during the many years these provinces formed a part of, or were claimed by, the sovereigns of this country as part of their dominions. Cider is said to have formed an important Saxon drink at a still earlier age, and I think there is a story of one of the Roman Pontiffs' good offices being secured by a present of some preserved fruits of English growth and preparation; showing that some progress in the art of confectionery had also been made at that early period. These luxuries, no doubt, were introduced through the many institutions of the monkish order by which the country was studded; where, likewise, other arts had their origin, or, at all events, were nurtured. There is also ample history to prove that the cultivation of fruit trees was one of the useful lessons transmitted to us by these austere brethren, and as many of the religious establishments of the dark ages were placed on low situations, surrounded more or less by the almost universal forest, we have a proof that shelter was one of the items of good cultivation that was easily obtained at that day, and one not to be despised at the present.

Another problem which there seems to be difficulty in solving is—Were the seasons at that time different to what they are now? The fact (if we may regard it as a fact) of Grapes ripening in the open air sufficiently well to make wine, would imply the summers at that time to be hotter than they are now. We must not confound the mode in which home-made wines are made in these days with that of the ancients, who, we expect, adopted the continental plan of making that drink from the fruit alone, while in the present century we are content, or obliged, to make ours from sugar flavoured with the fruit, to which we give it a name, while it is needless to say sugar in its present shape was not obtainable then. We will not, however, follow this subject further, except to suggest that it is possible the much greater breadth of land occupied with forest may have had something to do in rendering the parts that were cleared and cultivated more warm in summer than the generality of the country is now, as it seems to be an acknowledged fact that the destruction of the great American forests exercises considerable influence on the climate, and it is possible a like result took place here in the early history of this country, and this, naturally enough, opens another subject of inquiry not altogether foreign to the one we set out upon, as its bearing may perhaps exercise considerable influence on the matter of fruit-growing, and that is—Does not the destruction of timber and coppice plantation tend in some degree to alter the climate of this country, even at the present day? I expect to be told it does not, but I am not sure of this. The presence of trees is of more importance than many people are aware of. In some countries, especially tropical ones, their presence insures rain more or less at some time or other: hence the anxiety of the well-wishers of the Egyptian canal to clothe the banks of that gigantic undertaking with trees, so as to attract the clouds and obtain rain to cover the parched ground with some kind of herbage or other. It may, perhaps, be said that rain is not wanted by fruit trees in this country, but the dry summer of 1868 altered many opinions on this matter, and the idea that even Hops were better without rain than with it received a convincing proof to the contrary that year. It is quite possible the dry summers we have frequently had of late years may have been less favourable to the growth of good crops of fruit than was the case in former years. In saying this I must not be understood as being favourable to a showery, or rather a dull wet summer. On the contrary, a dry autumn seems almost indispensable to ensure a good fruit season the ensuing year; but I still believe that nice, copious rains in the early summer months tend to fruitfulness, as, for instance, the summers of 1847 and 1865, both favourable years, while in this last-named year more rain fell, even in the summer months, than in 1860, but the warm atmosphere rendered it highly serviceable as a fertilising agent, and most things did well that year.

The latter divergence from what was intended as an introduction to hardy fruit cultivation will be excused when the bearing it has on the subject in hand is taken into consideration, but as a too-lengthened paper is not wanted, we must omit the more modern history of fruit-growing, and go at once into that of its cultivation; not as an amateur who may be desirous of obtaining a small quantity of choice fruit, regardless of cost, but as an ordinary occupier of a farm who wishes to grow the greatest possible quantity of fruit of fair average quality at the least possible expense, so as to ensure in the long run a fair and proper remuneration for the expense incurred, including rent and other charges for the land, and due interest for the capital embarked in the enterprise. These matters must be perfectly understood by many here better than by me, and that being so I will not assume to put the cost of preparing an acre of land for fruit-plantation purposes into figures, but will content myself with such general observations as may, perhaps, help those contemplating going into fruit-growing from committing an error, especially if they have not had much experience that way, but to those who have made fruit-growing their study in life it is no easy matter to impart information; I need not waste further time in useless apologies, but commence at once with the culture of the most popular of our out-door fruits, and one that in some form or other is to be had the greater part of the year.

The Apple.—The antiquity of this fruit has been already alluded to as furnishing a popular drink to our Saxon and

Norman ancestors. It was most likely cultivated in the more civilised part of England before the Christian era, and, probably, Kent being the most advanced district in the country in the arts of civilised life, might be as famous for its fruit at that early period as it is now; but we will not go into this matter as but little light is thrown upon it, but there is reason to believe that during the latter years of the Roman occupation of this country this fruit was as plentiful as it was several centuries afterwards. The troublesome period of the Saxon, Danish, and early Norman occupations being at variance with the cultivation of everything but that wanted for the necessities of everyday life, no doubt, restricted its growth to a few places less turbulent than the rest; and monasteries, and other religious establishments became the principal fruit-growers of the kingdom, and to them we are, doubtless, indebted for the earlier varieties of this fruit, until the intercourse with the Continent brought further consignments of trees, and no doubt but these were planted on the most favourable sites that could be had. Orchards became more plentiful as more peaceful times came round, and instead of the Apple being confined to the table of the abbot and the noble, the peasant eventually came in for his share, and in his turn contributed not a little to improve the culture of the kinds then known, as well as now and then to introduce fresh ones. And at the present time there is certainly no lack of varieties to choose from, and the number is ever increasing, while some good old kinds still retain as high a name as ever. Although it must be admitted that some of these kinds are to all appearance about worn out, as the Ribston Pippin, for instance, still some kinds that were contemporary with it retain a respectable place still in the market lists. But we now come to the first important feature in the cultivation of this tree, and one, perhaps, that above all others determines its well-doing or otherwise, and that is the

Soil and Situation for an Apple Orchard.—And as this may, perhaps, be regarded as the most important matter in the paper, I may be excused dwelling more at length upon it than may be necessary with any of the other fruits. As many of the observations here given will hold good with them, I may at first say that one of the primary conditions to a successful result is only to plant this fruit where it is likely to do well. True, many, if not all, soils can be made so as to enable the tree to do tolerably well, but the expense of so doing will not insure that return for money expended, which is so essential a condition with the grower for market. Where, therefore, the soil and situation seem at variance with the well-being of an orchard, we emphatically say, Do not attempt one. The amateur, or gentleman, to whom the pleasure of eating his own fruit is a luxury, for which he is willing to give more than double the price the fruit would fetch in the market, may exercise his hobby in overcoming the obstinate tenacity of a piece of stiff clayey land he wants to make into an orchard, and flatter himself he has accomplished a great feat in fruit culture, and we are far from denying him all due merit in the case, but such an expenditure of money is not likely to be repaid to the grower for market. Again, we say, Do not plant in wet land, although you may think scientific draining will put it all right. Land for an orchard ought not to require draining, it being so much better for that operation to be done by Nature. Shallow poor soil, with an impenetrable subsoil, is even worse than stiff clay, as the latter can be improved by tillage, but some of the subsoils of certain districts contain so much that is pernicious to all vegetation, as to be next to sterile, and totally unfit for the growth of fruit trees; and we may here observe that the Apple, and, in fact, all fruit trees derive a great amount of nourishment from the subsoil, and they rarely do well when his is not to their liking, and I believe the best examples of fruitfulness are to be found in those orchards where the subsoil, or understratum, is of a kind that invites the roots downwards without entailing any of those evils which follow when the roots come in contact with deleterious matter, and the Vale of the Medway presents many examples of this kind, while I should think some of the waste lands in the neighbourhood, as Barming and Cannon Heath, to be composed of a thin poor soil, with a hard penny bottom impervious to the action of roots, or nearly so; but as I speak only from appearances, it is possible I may be wrong. Generally speaking, where a subsoil consists of a reddish-coloured material that water will scarcely soak through, it may be regarded as poor and unfit for orchard purposes, yet industry has often brought such patches into a high state of cultivation; yet it is questionable if they can ever be made profitable as orchard grounds. Nevertheless, the Apple, and most other fruits, are so accommodating, that they are often found thriving in soils and situations diametrically opposite to each other. Witness the fine plantations of fruit trees in the neighbourhood of Snodland, on land raised but a very few feet above high-water mark, and on a soil that at some former period, not very remote, perhaps, had been covered with water, and although deep and rich in many of the requirements of vegetation, would seem better adapted to husbandry purposes than that of a fruit orchard. On the other hand, we may see the same kinds of fruits planted and thriving on the dry flinty slopes of the range of chalk hills that traverse this country from west to east, but I believe the best and most productive orchards are on soils different from both of these, yet I am far from certain which of the two soils I mention (and they differ much from each other), are the best. Both have their peculiarities, and both their advantages, and fruit is extensively grown on both of them.

The two kinds of soils here alluded to are those resting respectively on the limestone and sandstone formations. The former, which will be better understood if the term Kentish rag be applied to it, embraces large tracts of the best land in the neighbourhood of Maidstone, extending to Malling, Wateringbury, and with occasional breaks to Boughton Monchelsea, and other places. The healthy character of this material as a subsoil is evinced by the vigorous growth of most kinds of forest trees, whose roots descend to a depth that would hardly be credited, where the position is favourable for their doing so; and the same may be said of many orchards, as, for instance, those of Farleigh and other places, and from what I have seen of the condition of the Apple trees in this county, coupled with what I have seen of the same in other counties, I should be disposed to give the preference to a soil of this kind to that of any other, where situation and other considerations were favourable, a deep surface soil and plenty of stones being its usual characteristics, and in colour it is rather a light grey, not so white when dry as a chalky soil, but without any tinge of yellow in it. Such a soil produces the largest elm timber, and the best feeding pastures, the abundance of calcareous matter it contains being favourable to the latter purpose, yet it does not exist in so great a proportion as to approach the chalky character, but is so happily balanced as to be capable of supporting some of our largest timber trees, and I may say some fruit trees also, for a greater number of years than any other description of soil. But enough has been said on this head. Let us now turn to another kind of soil, differing considerably from the one described, and yet possessing very important features of its own. And this is the soil resting on the sandstone formation, which embraces a considerable portion of the southern edge of this county, from Benenden westward on to Tunbridge Wells, and still further. This fertile district might, perhaps, have been still more favourable to the growth of trees had the sandstone on which it rests, and of whose decomposition it may be said to consist, been of a more durable character, for so completely has it disappeared in many places, that but few traces are left of its existence; but the presence of iron in the soil is evident in many places, especially at Brenchley, where the bed of a small rivulet is red with it. This soil certainly produces Apples of a different character from those grown on the ragstone formation, the same varieties differing widely in the two places, and there seems no question of the superiority of the cider made in the sandstone district to that of the other, but whether the market basket is as well filled is another matter. Most likely many gentlemen here can answer this question better than I can; but if I ventured an opinion I would say the ragstone district produced the best sample. But possibly this may form a subject for comment.

While here alluding to the character of the cider made in this county, I believe I am right in saying, that the best districts in the west of England for producing this drink resemble in some degree that of the sandstone country alluded to, and with the same absence of calcareous matter. Some orchards of the Dupplin Apple, so famed for its cider in the west, I have seen growing on soil I should take to resemble that of Brenchley, on some hillsides in Cornwall, and the produce was said to be excellent, but I do not think the sample of fruit would satisfy the salesman at Covent Garden, although some fruits grown there were of a good size. But in that district climate is as important an affair as soil, and as our purpose is not necessarily connected with the qualities of cider, the digression need not proceed further. But one peculiarity I may mention here, and one to which I would call most especial attention to, and that is the fact of these trees in the far-west being almost

entirely free from that grey lichen which, I am constrained to say, infests Apple trees in Kent more than I have ever seen in any other county, and I think more in the ragstone district than on the other. I do not mean old worn-out trees alone, but middle-aged trees, that ought to have been only at their best, become covered with it, and the wonder of fruit-growers from other districts is, that trees so much encumbered with moss should bear good fruit. A remedy for this is not so easily obtained, but a hint may be taken from the condition of trees near the coast, especially the west one; they being perfectly free from moss, although stunted and far from healthy, we may fairly conclude the sea breezes, with now and then a sprinkling of salt spray, keep this pest down, and perhaps some experimentalist might do some good by exercising his Hop-washing engine with weak salt water during winter, when there are no leaves on the trees to do injury to. I merely throw out the hint, as I have reason to believe, from what little I have tried of it myself, that salt water is more efficacious than quick-lime in killing moss on trees.

(To be continued.)

GROUND LEVELLING AND PRACTICAL GARDEN PLOTTING.—No. 18.

DRAWING PLANS.

To draw and transfer *fig.* 41 to the ground. From centre o draw circle *a b c d e f*; divide it into five equal parts as before described. With point *f* as centre draw arc 1, 1, as indicated by the thick and dotted lines; from the same point draw arc 2, 2, as shown by radius *f* 2, 2; and from the same point draw arcs 3 and 4. From points *a*, *b*, c, *e*, draw corresponding arcs, and from centre o draw the outside circle.

To transfer *fig.* 41 to the ground. Find the centre of the piece of ground, insert a peg as at centre o, and lay the diameter line *a d*. From centre o, with a string 38 feet long, trace the outside circle; reduce the string 4 feet, and trace circle *a b c d e f* with radius *o a*. From points *a* and *d* trace arcs intersecting at *t*. Divide the diameter line *a d*, as described in *fig.* 40 (page 386); lay a line from arc *t*, passing through the second division and cutting the circle in *f*; insert a peg at point *f*; lay a line from *f* to *a*, which is one side of the polygon, and

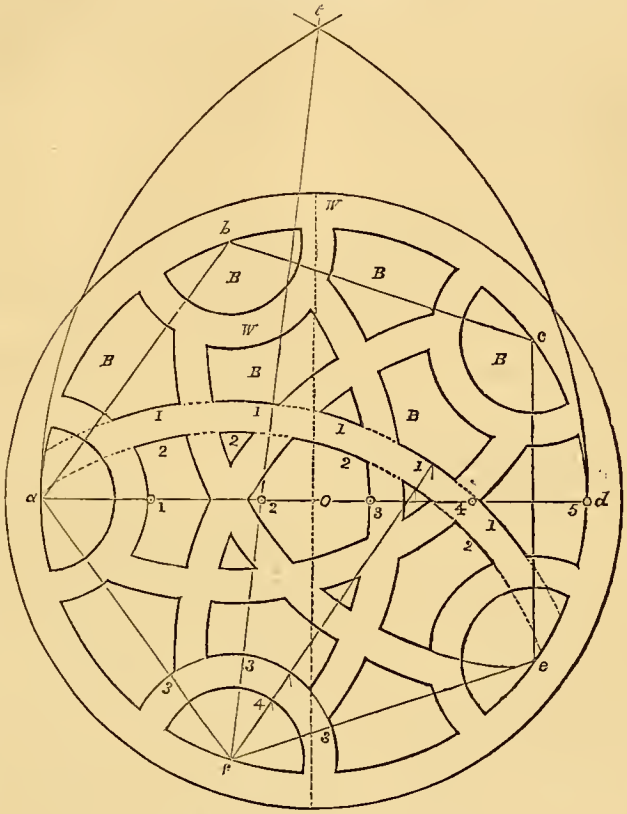


Fig. 41. Scale 24 feet to the inch.

apply the cord five times to the circle and insert a peg at each point, as at points *a*, *b*, c, *e*, *f*. From the peg at point *f*, with a string 45 feet long, trace arc 1, as shown by *f* 1. There it is better to trace the arc from one side of the circle to the other, as shown by the thick and dotted line. As the arcs are traced from the corresponding points of the polygon, the walks can be easily determined, and also the angles of the beds. Then reduce the string 4 feet, which is the width of the walk, and trace arc 2, as shown by the thick and dotted line. From the same point, with a string 13 feet long, trace arc 3; reduce the string 4 feet and trace arc 4. From the pegs at points *a*, *b*, c, *e*, with the same lengths of string, trace similar arcs, and the design is complete. The five triangular figures round the centre pentagon are beds. Where the lines cut each other are the angles of the beds. w indicates the walks, B the beds.—M. O'Donnell, *Gardener to E. Leeming, Esq., Spring Grove, Richmond.*

PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

Drymoda picta (Spotted Drymoda). *Nat. ord.*, Orchidaceæ. *Linn.*, Gynandria Monandria.—Native of Moulmein. A pigmy Orchid, not 2 inches high. Flowers greenish, purple-spotted.—(*Bot. Mag.*, *t.* 5904.)

Rhododendron sinense (Chinese Rhododendron). *Nat. ord.*, Ericaceæ. *Linn.*, Decandria Monogynia.—Native of North China and Japan. Formerly this was called an Azalea, but "botanists are now pretty well agreed in considering that Azalea can no longer be considered a distinct genus from Rhododendron." Flowers dull orange.—(*Ibid.*, *t.* 5905.)

Androsace carnea *var.* eximia (Showy Flesh-coloured Androsace). *Nat. ord.*, Primulaceæ. *Linn.*, Pentandria Monogynia.—Native of the Pyrenees and Alps. Flowers pinkish purple.—(*Ibid.*, *t.* 5906.)

Fuchsia sessilifolia (Stalkless-leaved Fuchsia). *Nat. ord.*, Onagraceæ. *Linn.*, Octandria Monogynia.—Native of Colombia. Leafy greenhouse shrub from 3 to 6 feet high. Calyx pinkish and green; corolla crimson.—(*Ibid.*, *t.* 5907.)

Dorstenia Mannii (Mr. Mann's Dorstenia). *Nat. ord.*, Moraceæ. *Linn.*, Tetrandria Monogynia.—Native of Old Calabar. All the parts of fructification green. A diminutive plant.—(*Ibid.*, *t.* 5908).

Curcuma albiflora (White-flowered Curcuma). *Nat. ord.*, Scitaminaceæ. *Linn.*, Monandria Monogynia.—Native of Ceylon. Flowers white; lip yellow-bordered.—(*Ibid.*, *t.* 5909.)

Primula japonica (Japanese Primrose).—"Hail! Queen of Primroses!—for so its introducer designates the lovely flower we now figure, which is hardy as a peasant, resplendent as a princess. It is just ten years since Mr. Fortune met with it in Japan, a basketful of blooming plants having been brought to his door; they were of course secured, but the journey home was too much for them, and despite every care none reached England alive. Ever since that time endeavours have been made to introduce this lovely plant, but till now without success, since the seeds have been found to lose their germinating power in the course of transmission to Europe. At last, however, perseverance has been rewarded, and from seeds sent to Mr. Fortune by W. Keswick, Esq., of China, and Messrs. Walsh, Hall, & Co., of Japan, plants have been raised in the establishment of Mr. Bull, of Chelsea. Our gardens have thus secured a perfectly new, thoroughly hardy, and exquisitely lovely Primrose, one which is not only valuable on account of its intrinsic beauty, but doubly valuable as placing in the hands of the hybridiser important new materials, which will no doubt soon be turned to good account.

"This Primula japonica, which has been characterised by Pro-

fessor A. Gray in the "American Academy of Arts and Sciences" (vol. vi., New Series), may be described as a vigorous-growing, stemless perennial, with oblong-spathulate, rugose, sharply denticulate leaves, 6 to 8 inches long, and about 3 inches broad. The scape is stout, erect, smooth, 1 to 1½ foot high, bearing four or five distinct whorls of from ten to fourteen flowers, each flower having a subulate bract at the base of its pedicel. The flowers are about an inch in diameter, of a lively magenta colour, and the limb is flat, with obcordate distinct or overlapping segments, the individual flowers being altogether very suggestive of those of a highly-coloured Phlox Drummondii. It may be added that on the occasion of its being exhibited at the meeting of the Royal Horticultural Society on May 3rd, its first public appearance in England, it was voted a first-class certificate by acclamation.

"One great merit of this new Japanese Primrose is that it yields varieties no less beautiful than itself. Already the following distinct forms have been noted:—

"*P. japonica lilacina.*—This has flowers rather larger than the type; the eye is surrounded by a well-defined zone of orange-red, shading outwards to a beautiful rosy lilac, the outer portion of the corolla lobes being white. This very chaste-looking variety has been exhibited, and has received a first-class certificate.

"*P. japonica alba.*—This has white flowers, with a golden-yellow zone round the eye, and the flowers are rather below the average size.

"*P. japonica carminata.*—This very distinct form has the flowers of a pure carmine red, with a maroon-crimson ring round the eye.

"*P. japonica splendida.*—A variety of dwarfer, denser, and more stocky habit than the type, the flowers above the average size, of a deep bright magenta, the zone of a rich bright crimson, surrounding a broad and open eye, which shows the yellow interior of the tube; the segments of the flower are very slightly overlapping. This is one of the most brilliant varieties yet obtained.

"*P. japonica rosea.*—Very distinct, with the flowers of a lilac-rose, and having a crimson ring round the eye.

"Of the hardiness of the Primula japonica there can be no doubt, since plants which have been standing all the winter fully exposed in the trying atmosphere of London, are perfectly healthy, and came into bloom about the middle of May, some two or three weeks later than the plants which had been potted and flowered under glass."—(*Florist and Pomologist*, 3 s. iv. 121.)

THE LAWN GRASS AND THE DAISY.

"I wish you would go away and grow somewhere else," said the Lawn Grass to a little white Daisy that was opening its first flower on the very edge of the grass, just where its greenness was lost in the rich brown soil.

"Why should I go away?" replied the Daisy. "I have everything that I wish, everything that is needful for life, and health, and growth. I have light, and air, and sunshine, and moisture, and sweet rich soil; I am more than content."

"But I do not care for you so near me. I do not like your thick strong roots twining in and out among my fine fibry ones. Why cannot you go and live out on the commons, or the roadsides, or in the pasture fields among other Daisies? you would find there all that you need."

"Why should my presence be so distasteful to you?" said the Daisy with a sigh. "Are you envious lest my little white blooms should dot all over your dark green turf? Did not our ancestors dwell together in peace for hundreds and hundreds of years—Grass and Daisy, and Daisy and Grass—clothing the rich pasture fields, and climbing the high hills, and making more and more beautiful the warm sheltered valleys where men build their homes? Never cattle yet that I heard of turned away from their pasturage because my starry flowers adorned it."

"You are greatly mistaken, Miss Daisy, if you take me for the common Meadow Grass, that grows so long, and thick, and coarse, and over which the winged seeds play, and settle, and take root just as they will. I assure you you have ventured on forbidden ground; all this long sweep is sacred to my Lawn Grass; no weed nor flower is ever permitted here; I have it all my own way."

"You are at best but stunted grass, miserable growth, good for neither man nor beast; short cousin to noble relatives, who pass you by without recognition. You are so shorn and swept over, and rolled upon, and tamed down, that nothing but colour remains of you. Why, you dare not hang out your little silver seed-bells even for an hour; you know they would be gone in no time—rudely swept away. Do you never tire of wearing the same unchanging green spring and autumn, and summer and winter, nothing to break the monotony of your ever-enduring verdure?"

"I change all too rapidly when the summer sun scorches me, and turns my emerald green to dusky brown."

"Do you never long to grow up and out into what Nature meant you, to bud, and bloom, and win the fruition of all your growth? Ah! I do not envy you, your sameness would weary me. I would rather far be the common grass mountain sheep wander over, and wild flowers grow among."

"Yet I am loved and cared for," replied the Lawn Grass; "eyes weary of brilliant colours rest tenderly upon me, and labour and cost are not counted to maintain me at my best."

"I, too, am loved," said the Daisy softly, "though I grow without cost or care. Generation after generation of children have sat on sunny banks and woven their long Daisy chains; and poets have sung sweet verses of me that can never be forgotten."

"And yet you are the commonest of all flowers, a wayside weed, trodden upon without compunction, not cared for when present, not missed when absent."

"A wayside weed I may be, common too, that does not make me of less value. I am still a starry flower with rose-tipped florets, growing almost everywhere; so enamoured of life that with a will and a grace I can adapt myself to every gradation of heat or cold, dryness or moisture. Not cared for, did you say? Why, bearded manhood passes me by reverently at dewy sunset, and children hush their prattle to catch the notes of my whispered prayer."

"All well enough, Miss Daisy," replied the Lawn Grass, "but you are out of place here; you cannot understand the necessities of my position. Your life would be safer and better out in the summer woods, or on the wild moors. Your end will come."

And it came all too soon for the poor little Daisy; a gardener passing by caught sight of it, and with a—"You are not wanted here," threw it into a rubbish basket, and ended its short life.—A. M.

NOTES AND GLEANINGS.

We have, on more than one occasion, noticed the beautiful stands of cut Roses which are from time to time exhibited by R. Webb, Esq., of Calcot, near Reading, and more especially the perfection, both in size and in richness of colour, in which he produces the Tea-scented Maréchal Niel, with which variety every spare place on his walls is covered. At the last show at South Kensington, on the 7th inst., he again exhibited examples of this Rose, which were admired by all who saw them, constituting, in fact, one of the features of the day, taking for his two stands an extra prize in the miscellaneous class.

—— We are very pleased to see that under the title of "Mycological Illustrations," edited by Mr. W. Wilson Saunders, assisted by Mr. A. W. Bennett and Mr. W. G. Smith, all well-known botanists, it is proposed to publish a series of coloured figures of British Hymenomycetous Fungi, drawn from fresh and well-developed specimens, with a view of giving faithful representations of many new and rare species not hitherto figured in any work published in this country; and also occasionally of refiguring such species as may be thought to require better illustration than has been given them in our standard works on the subject.

—— The Toxteth Park and Aigburth Gardeners' Mutual Improvement Society is a success. Though the need of such a means of intercommunication and mutual assistance as this Society affords had long been felt, it did not appear certain what reception such an association would meet with. At the commencement the names of twenty-four members were enrolled, and during the first half-year, which ended in September last, these were increased to forty. In the succeeding half-year fourteen new members were added, and six lost, leaving the present strength at forty-eight. The objects of the Society, as set forth in the rules, have been strictly adhered to; papers on subjects pertaining to gardening having been read and discussed, and questions of practical interest considered at each meeting. An enumeration of the papers, in order as read, will furnish an idea of their nature and scope:—"The making and keeping of Grass Lawns," by the President, Mr. J. H. Mason; "The Potato and other members of the Nightshade family," by the Vice-President, Mr. Thomas White; "The Origin and Nature of Soils," Mr. George Thomson; "What to Plant in Parks and Gardens," Mr. Frederick Brown; "Garden Peas," by the Secretary; "The Culture of Mushrooms," Mr. W. H. Waddington; the latter completing the course for the first half-year. The second half-year was opened by the Vice-President,

on "Ferns;" followed by Mr. Joseph Hutchinson, "The Pruning of Hardy Fruit Trees;" Mr. Brown, "The Culture of Melons and Mushrooms;" Mr. Joseph Gore, "The Fuchsia;" Mr. E. Roberts, "Pruning;" Mr. James Stewart, "Forest Trees;" Mr. Thomson, "Variegated Pelargoniums;" and the Vice-President, on "Epiphyllums and the Cactus tribe." Besides these, many other matters of interest have from time to time occupied the attention of the Society, and much profitable discussion has arisen.

—— A Poet's Notion.—All plants are composed of essentially two parts—the leaf and root—one loving the light, the other darkness; one liking to be clean, the other to be dirty; one liking to grow for the most part up, the other for the most part down; and each having faculties and purposes of its own. But the pure one, which loves the light, has, above all things, the purpose of being married to another leaf, and having child-leaves, and children's children of leaves, to make the earth fair for ever. And when the leaves marry they put on wedding-robes, and are more glorious than Solomon in all his glory, and they have feasts of honey, and we call them flowers.—(*John Ruskin.*)

WORK FOR THE WEEK.

KITCHEN GARDEN.

Hoeing, forking, and surface-stirring must be diligently persevered in; their advantages are that weeds are extirpated, slugs disturbed and destroyed, moisture retained when it is most needed, and healthy root action preserved. Trenching vacant ground must be prosecuted where required, and if manure is wanted on ground about to be planted it is best to lay it upon the soil after it is trenched, and then fork it in. Let all green refuse be removed from every part, and either dug in or taken to the char heap. Be careful not to take too much *Asparagus* from the main beds; it is best to have a reserve bed, which, if closely cut, will throw up shoots for a considerable time, and as it will thus be rendered useless, a new bed should be made every year to supply the deficiency. A sowing of Early Mazagan *Beans* in an exposed situation made now will be useful by-and-by. Plant out the forwardest *Brussels Sprouts*, *Buda Kale*, and Green *Savoys;* if the weather keep dry the holes had better be puddled. Plant also *Cauliflowers* for succession. Continue the gradual thinning of *Carrots* and *Onions* as they may be required for use, but *Parsnips*, *Red Beet*, *Salsafy*, and *Scorzonera* should always be thinned to the proper distance at once. *Cucumbers* on ridges and banks must have plenty of water, and liquid manure occasionally. A few more *Dwarf Kidney Beans* may be sown for succession. Sow Knight's Marrow and Early Frame *Peas* for succession; these are benefited by a slight soaking in water previous to sowing, and also by pouring water upon them after they are laid in the drills, but not after they are covered. Advancing crops will be benefited by applications of liquid manure, not too strong, twice a-week. See that the ground is kept well stirred. *Scarlet Runners* must have the earth well stirred about them. *Salading* of all sorts is now in great request; look well to successional sowings, and let all have copious supplies of water to induce crispness and coolness. The buds of *Sea-kale* on the old roots must be thinned out considerably, and, if not already done, dress the beds with strong manure and fork it in. Young seedlings of Sea-kale must also be thinned, and the thinnings transplanted if required.

FRUIT GARDEN.

If dry weather continue we would recommend that due attention be given to the watering of fruit trees, for as the fly and other insects are unusually prevalent, an extra exhaustion will be the consequence. It is impossible to apply tobacco water in extent commensurate with the evil. Clean water can, however, be heavily battered on the infested trees, and in such cases it is well to have some slaked lime at hand to cover the ground at the foot of the trees, for unless something of the kind be done the insects will reascend. To those who are particularly anxious about the future success of their favourite fruits, or who have been planting new kinds, I would recommend them to make strenuous efforts during the present period to extirpate insects and to assist weakly trees. Rest assured that no mode of planting, winter pruning, or complicated modes of training, will be of any avail unless the vegetation of the summer's growth be attended to in due time. Gross shoots, or robbers of all kinds, should constantly be stopped when about 4 inches long throughout the growing season. A very general mulching should now be given to the fruit trees where they are properly planted and possess, as they ought to do, abundance of surface roots.

FLOWER GARDEN.

On light dry soils many things will be greatly benefited by a thorough soaking of water, especially coniferous plants, most of which make but one growth during the season, and should be encouraged at the proper time where rapid growth is wished. This attention will be especially necessary in the case of young specimens growing on lawns. If Stocks, China Asters, &c., are not already planted out where they are to flower, take advantage of the first showery day to do this, and attend to them for a few days with water until they become established. See that Dahlias, Hollyhocks, &c., are properly staked and kept tied up to prevent their being broken by sudden storms. Let the mass flowers have frequent sprinklings, and apply the hoe through them to break the crust. Still keep a watchful eye on blanks about the ornamental department, and let them be instantly filled with some of the reserve stock or with late annuals. Newly-laid turf should receive water, and, if suffering, strew some tan or litter thinly over to break the sun's rays. The Roses must have some attention.

GREENHOUSE AND CONSERVATORY.

The beds in the conservatory, if they have been properly made, will now require a large supply of water to keep them in a sufficiently moist state, and the soil should be occasionally examined, especially near strong-growing plants, for the amount of moisture absorbed by these at this season is greater than many persons imagine. Whenever water is applied the beds should be thoroughly soaked to the bottom, and where it can be done without annoyance to the family, manure water should be given to such plants as are known to enjoy it. This should be furnished in moderate quantities, after well soaking the soil with clean water, for to give it in large quantities would probably cause it to reach and injure some adjacent plant. If red spider make its appearance upon any of the specimens growing in the borders, the pot plants in flower should be removed as soon as possible, and the infected subjects given a thorough washing with the engine, and this should be repeated at short intervals until the enemy be thoroughly subdued. Sprinkling the surface of the soil and paths must be often resorted to—during bright weather two or three times a-day; and by all means let a thin screen of some kind be thrown over the roof, or portions of it, from 10 o'clock until 3 P.M. This will retard the beauties already in blossom, and prevent too great a demand on the energies of the plants. Let the growths of the Azaleas for the next year be encouraged without delay. These should be in a plant-house by themselves, or they may be placed along with young or growing Camellias. Syringe several times a-day, and throw a screen over them whilst making their growth, and stop gross shoots in order to equalise their powers and to produce symmetry of form.

STOVE.

See that the specimens here are afforded plenty of space. The inmates of this house are mostly plants of easy propagation and rapid growth, and, consequently, in many cases advantage is taken to grow too many for the accommodation at command, with the result that there is hardly a respectable specimen produced. There can be no doubt that a moderate quantity of well-managed specimens will be more valued than a larger number of half-starved, miserable-looking subjects. Attend frequently to the growth of climbers, and prevent their getting into a state of entanglement. Aim at securing for Orchids rapid growth by keeping the house warm and maintaining a regular humid atmosphere, sprinkling the paths, &c., sufficiently often on bright days to keep them continually moist, but be careful not to make the plants over-wet at the roots, by using the syringe too freely over the foliage. Let specimens in baskets or on blocks be kept sufficiently moist. These will enjoy a slight bedewing with the syringe morning and evening whilst in a growing state.

PITS AND FRAMES.

Hardwooded plants in these structures will now enjoy a more moderate temperature than they probably could obtain in houses, especially in pits turned to the north, which will prove a good place for some of the tribes in very hot weather.—W. Keane.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

The wind on the 10th still keeps due north, and there have been some very cold mornings during the week, the sky over-

cast with hard lead-coloured clouds, and not a speck of dew to refresh the stunted foliage. On the afternoon of the 9th, however, we had a few minutes of a sunny shower, and since then the weather has been more genial, and we hope that it will continue so. This change has led to a change in our treatment.

We never saw things stand still more than they have done lately. For eight days Cauliflowers, though looking healthy enough, made no advance; the little heads seemed resolved not to budge an inch. In the usual June weather we should have made them do so by a free manure-watering at the roots, taking care that it did not reach the hearts or even the leaves of the plants to any extent. But when the air was so cold and the earth so cold we had little faith in a deluging with cold water. Vegetables would often be better without it. The comparative warmth of the 10th, however, induced us to give a good soaking with sewage, which was soft and not over-cold. As the Cauliflowers were standing on beds no extra water was likely to remain. After this sunny afternoon we expect to see a great change in two or three days as respects the firm flower-heads. Cabbages we also assisted with such waterings, as we want free gatherings now. Successions of all things have been attended to as have been frequently referred to, and it will be well to thin Turnips, Lettuces, &c., in good time.

Asparagus.—There have been extra demands for this during the present season, and it has never been better. Now, as Peas are coming in pretty freely, we must let the Asparagus run and grow for next season, gathering the heads much more sparingly. From what we intend forcing no heads have been gathered for fully three weeks. We scattered enough salt to make the ground whitish between the rows. A slight sprinkling of salt is of advantage in old kitchen gardens, and especially for all plants which belong naturally to the sea coast. It is one of the best means of settling worms, slugs, and snails. A greater dressing, such as suits Asparagus, keeps the ground moist in a dry season—one reason why salt should never be applied to gravel walks, except early in the year.

Cucumbers.—Our plants in frames over a dung bed in the usual way have done very well, but they have not borne so heavily as those in a 6-feet-wide pit with a 3½-feet bed in front and a pathway sunk behind, so as to do the work inside. The extra fertility we attribute to the plan adopted as described some time ago—namely, not turning the plants out in the narrow bed, but planting in 15-inch pots, and sinking the pots in sweet manure covered with soil, and fresh surfacing the plants as they grew, until the pots were surfaced over and the roots passed out and ran along the surface of the bed, to be slightly covered again and again. We know no plan to equal this, where there is little roof-room. When the gardener has a wide span-roofed house he may boast of fine parasol leaves, and also have fine fruit and in fair abundance; but when the greatest quantity of fruit in a small space becomes the chief object, then the number of the fruit is of more importance than the huge size of the leaves, for the latter are only good for looking at. By curbing the roots in the first instance the leaves are kept comparatively small though healthy, and the fruit come in such abundance that many of the small ones must be cut away.

Mushrooms.—We put up an additional piece in the Mushroom house, and spawned a bed in good order for the purpose; previous beds bearing profusely. The bed which we described lately as being barren in the centre is now over, and we have not quite made up our mind as to renewing it, for we can hardly expect the weather to remain as cold as it is now, and though we have had fine Mushrooms all the season in a Mushroom house above ground, we prefer from the end of June to have the beds in cellars, or shady open sheds. In answer to some inquiries, we are sorry to say that we can add nothing to what has frequently been advanced. Too great heat at spawning-time is a fruitful source of failure; 80° with a tendency to fall is a good average heat. If in the least degree higher, the spawn should be laid but little in the manure. If much lower, say averaging 60°, the spawn will not run so quickly, but it will run at a low temperature, as we have had beds out of doors, from which we gave up gathering about November, left with only a slight covering all the winter, and they produced freely the following March and April, after watering with warm water. For constant supply we prefer shallow beds, say about 15 inches deep, and to make a piece often. Some time ago we saw a fine bed in a horse-box, the size of two stalls, which the farmer did not want for six months. The bed was made flat, with 16 inches deep of well-wrought stable manure, and 6 inches of horse droppings on the surface, and spawned when about 78°, and as the bed kept falling towards 70°, it was earthed-over with stiffish soil, and then a little dry litter was placed over it. In seven weeks the gentleman, besides what he used himself, had the pleasure of sending baskets of nice Mushrooms to his friends. He was never so successful again, to punish him, he said, for his boasting that he would beat the gardeners. The truth is, that he was less attentive to the minor points necessary to secure success. Considering how the Mushroom flavour helps many a fine dish in which it is not seen, we wonder that more farmers do not have a bed in some shed or out-of-the-way corner.

FRUIT GARDEN.

The work has been very much the same as in previous weeks. We commenced shortening shoots of Apple, Pear, and Plum trees, picking out their points. This is preferable to cutting them when larger, as answering the purpose better, and giving a less sudden check to the system of the plants.

ORNAMENTAL DEPARTMENT.

Pinks now want supporting, also Picotees, Cloves, and Carnations. The frost of the winter has made havoc with fine lines from which we expected sheaves of cut bloom. Young plants with a flower-stem or two are all that are wanted for a few fine blooms, but they are almost worthless when great masses of bloom are required. Having but limited room we were forced to let Perpetual Carnations, &c., go into abeyance, but now we should be glad of them again. They formed splendid beds in summer, never ceasing to bloom, and for winter blooming they were invaluable. Like many others, we have been under the necessity of making some things special for a time and then giving them up for something else. A correspondent asks us how to treat his Ranunculus, which, he says, were given to him as a valuable collection. First, let them not suffer from want of water, but yet keep them cool and the soil round them firm. The easiest way to do this we found to be to firm the plants well when the bloom-stalks began to appear, then loosen the surface soil a little, water liberally, and cover the ground between the plants with rough riddled rotten dung or leaf mould. If more watering is wanted there will be the richness of this mulching added, and, if not required, it will do much to secure moisture and coolness below.

We have had much potting and much more left to do, but we shall pass all for the present, only saying that we have broken the back of our bedding-out, though there will be still a considerable amount of making-up, and such plants as Coleus we shall keep where they can be protected for a week.

Watering.—It is quite common to find directions in contemporaries about watering bedded-out plants three or four times a-week. That we consider to be drenching indeed in such weather. What we planted out, though mostly raised from the soil and not turned out of pots, we watered rather sparingly when planted, and from that time we gave no more water until this day, after the greater warmth of yesterday, and because the leaves had become enveloped in a misty fog. Strange though it may seem to some, such a misty warm day is just the day to water. Our plants have suffered a little from the cold weather, but if we have warm weather it will not be noticed a fortnight hence; they would have suffered more if we had added to the coldness of the roots by watering. We have not lost a single plant turned out, though a few Coleus plants put in just to let it be seen what was intended are very much browned.

Now is a good time to repot *Salvia splendens*, and all the smaller-leaved *flowering Begonias* for autumn and winter blooming. This Salvia does well plunged or planted out of doors at the end of June, and raised and potted carefully in the autumn. It makes quite a blaze in the first winter months. We have tried it repeatedly in the flower garden, but our place is too windy and cold for it. In sheltered localities much farther north it does well out of doors. We have seen single plants on lawns like a burning bush for brightness. Cuttings of Begonias put in now will make pretty, small, flowering plants before winter.

Achimenes coming into bloom like a saucer to stand in, they do admirably when treated as semi-aquatics. The finest we ever saw had the pots standing in the inner row of a conservatory fountain, and the bottom of the pot was in from one-eighth to one-quarter of an inch of water. Necessity is sometimes a fair instructor. Every day we have less faith in general shading, less faith in sulphur as a deterrent to red spider,

unless from its fumes, and less faith in the propriety of sending gusts of cold air into hothouses.—R. F.

TO CORRESPONDENTS.

*** We request that no one will write privately to any of the correspondents of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By doing so they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely to The Editors of the Journal of Horticulture, &c.*, 171, *Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

Books (*Theta*).—There is no small book on Coniferæ. Gorden's "Pinetum" is the best, and is not a large volume. (*T. M.*).—Keane's "In-door Gardening" may suit you; you can have it free by post from our office if you enclose twenty postage stamps with your address.

Address (*A. J.*).—We cannot give the address.

Exotic Ferns (*A Constant Reader*).—All in your list are exotic except the Adiantum Capillus-Veneris, which is a native of this country. You do not seem to be aware that "exotic" means a native of any other country than the British Islands.

Cottagers' Horticultural Shows (*C. B. M.*).—One of the most successful was established at Pytchley by the late Rev. Abner Brown. We have his rules. &c., which we will *lend* you if you send us your address.

Drying Ferns (*A Subscriber*).—Spread between sheets of thick blotting paper the specimens in their natural position, placing every pinna flat and separate, and put on the top of the blotting paper a flat board and a weight of 7 lbs., or thereabouts. It is best to have a quire of blotting paper. When quite dried place them on sheets of cartridge paper, and attach them to it by narrow slips of green paper passed over the stems and made to adhere to the cartridge paper by strong gum water.

Chrysanthemum Cuttings (*Idem*).—Nice little plants for late bloom may be obtained by taking off cuttings 5 or 6 inches in length from the tops of the shoots in July or August, striking them in slight bottom heat, potting off in 4-inch pots, placing on a hard bottom out of doors, and shifting into 6-inch pots when they have filled the others with roots.

Raising Water (*D. Davis*).—An artesian well in your case is out of the question. An Abyssinian tube pump would suit you; but really as the water is so plentiful within such a short space as 6 feet from the surface, we should be inclined to make a shallow well in the usual way, attach a common pump to it, with a cistern to pump in for common purposes. If you wish to raise the water some 20 or more feet, so as to flow where you want it, then have a small force pump and an elevated cistern. The Abyssinian pump would be the simplest. We would, however, in your case, simply make a shallow well.

Strawberries in Pots for next Season (*A Subscriber*).—Perhaps the simplest plan to prepare Strawberry plants for forcing is to layer the runners as soon as you can obtain them in light rich soil in 3-inch pots, fastening the runner into the soil with a little stone over it. Water when necessary. When the pots are full of roots cut the runners, repot them firmly in 6-inch pots, and set the plants on a hard bottom in the sunniest spot you can command. Never let the plants want for water until the end of autumn, and before frost sets in place the pots in your cold pit, or wherever they can be protected from excessive moisture and much frost in winter. If you have no runners you may obtain them and treat them as above, but depending on themselves, when placed in small pots; they should be shaded before they begin to grow. Black Prince is good for producing freely and early with little heat, but Keens' Seedling is best for a beginner. For later production have a few of President, Dr. Hogg, &c.

Cucumbers in a Lean-to House (*W. L.*).—Your proposed plan of growing Cucumbers will answer very well, but to commence in April the dung of the bed would require to be well worked and sweetened before making the bed, and therefore more would be required. Even then you would require to protect the glass by covering at night up to the middle of June. Without covering the glass, from the middle to the end of May would be quite time enough to plant out over such a bed. Your high wall at back and open pathway will detract so far from the heat of the bed. You might have Cucumbers as early as you liked if you added hot-water pipes.

Summer-pruning Pear Trees (*T. L. M.*).—In the present case we quite agree with the gentleman, and disagree with the gardener. The nipping-back the shoots of a Jargonelle Pear in the first days of June to an inch in length has a tendency to make every bud left start into a wood shoot. It is a much better plan to nip out the point of the young shoot when it is 6 inches long. By doing so with Apples and Pears we often get fine fruit buds formed at the base of the shoots of this year. We would have so nipped all our shoots on dwarfs and pyramids but for press of work, but it will not be longer neglected. If a tree is growing very vigorously it is well to leave a number of shoots untouched in order to attract the sap, but not so many as to shade the shortened ones from the sun. It is also advisable, in the case of a large tree, to do such work at three times, with an interval of a few days between them, beginning at the top of the tree; then follow with the middle, and finish with the part near the base. This does much to regulate and equalise strength, and to mature buds throughout.

Lawn Sand (*E. P.*).—We only know it by the advertisement.

Royal Horticultural Society.—"*F. R. H. S.*" asks, "Is there to be no Horticultural Congress this year at Nottingham? The papers last year at Oxford, and the discussions, were decidedly interesting, and it affords the means of ventilating many of the gardening questions of the day. It is not too late, with an energetic committee of management such as the one which holds the reins at Nottingham, to make arrangements for one even now. There are plenty of subjects to choose from. Take the water question alone, for instance, as 'Storing up Water Supplies;' 'Application of Water to Plants;' 'Syringing;' 'Liquid Manures;' 'Heating by Hot Water;' 'Boilers;' &c."

Market Gardening (*W. C.*).—So much depends upon circumstances of which we know nothing, that we cannot advise. Skill, connection, opposition, &c., have to be considered.

Pit made into a House (*An Old Subscriber*).—In looking over what is stated at page 390, we think a slight error of two words has crept in. You will come to the sentence, "Have the ridge-board so as to receive your sashes in front on rafters, these sashes to be moveable at back." We want you to leave out the words "at back," because as these sashes are moveable we wish you to use them for all the ventilation you need, pulling part a little down when you want top ventilation, and shoving them up over the ridge-board when you want front ventilation. There are modes of pivot-hanging the coping of the ridge-board to do that easily, but if you can gain access to the front of the house outside, you could elevate two sashes in front by placing a notched block of wood beneath them, and bring two down a little from the top, and have all the ventilation you need. We advocate this mode as you have the sashes already. The back span or hipped roof we would have fixed. You may have front glass of course, and you must have it, if you wish to work upright in front; but we have supposed you wanted merely a bed there for keeping your plants, which you could reach from the path behind it In such a case you might run a 12 or 20-inch square of glass, fixed all the way along, between the boarded wall and the wall plate on which your sashes rest in front. If you have any moveable sashes in front you will much increase the expense. We would be satisfied with the house on the same site. You may make the additional width at back, or both back and front. If you did the former we would have a bed in front and a stage behind. We would leave the flue where it is. The heat will be sure to ascend. We would like it all the better for the flue being so much below the level of the boards on which you set the plants. The flue being low would better enable you to have a hotbed of stable manure, but in that case there must be openings to let the heat up from the flue, and you must likewise have a flooring across 2 or 3 inches above the flue, or you should surround the flue and cover it with 3 or 4 inches of rubble work. In such a small place we think that having a hotbed would be more trouble than it was worth, and then you must sweeten the manure well before introducing it if you have plants in the house at the time. We think the flue will do all you want. For such sashes no rollers will be necessary. Twenty-one-ounce glass will be ample for the back, and instead of seconds and thirds we should be satisfied with good fourths.

Mushroom-growing in a Cellar (*A Subscriber*).—There is no road to success without care, forethought, and attention, and you may have given all these and yet not succeed. We cannot be sure, because we know nothing of the state of the half load of manure "you bought and put in the cellar, and left there to sweeten before making the bed." In the first place, half a load would make but a small bed; in the second place, we would prefer working and sweetening it before placing it in the cellar; thirdly, in a cellar 60° was scarcely high enough for the bed at spawning time; we would have preferred it to be from 10° to 15° more. Still, as the bed retains that temperature, the spawn will run. From 55° to 60° will be high enough for the temperature over the surface of the bed. As you have spawned the bed, if you have not earthed it over, we would advise you to add from 1 to 2 inches of horse droppings to the surface before earthing. If earthed over already, then cover the bed with a little hay or clean straw, a mat, or cloth, &c., just to give the slightest additional heat. In two months, or earlier, from spawning you may expect Mushrooms. In "Doings of the Last Week" lately it was stated how the centre of a bed suffered from over-heating, whilst the sides bore profusely. In the same place small beds are like a white sheet all over, but the beds were 15° warmer than yours when spawned.

Lawn Grass Failing (*J. N.*).—You should at once cover the lawn with rich soil, having previously raked it well with an iron rake. The soil should be put on one-quarter to half an inch thick; after the first rain it should be again raked well, and when dry the following mixture may be sown:—Festuca duriuscula, 6 lbs.; Festuca ovina, 2 lbs.; Cynosurus cristatus, 6 lbs.; Poa nemoralis, 2 lbs.; Trifolium repens, 4 lbs.; Lotus corniculatus minor, 1 lb. Roll the ground well after sowing. The lawn should not be mown or rolled for at least a fortnight after sowing. The seeds may be had of any of the principal seedsmen.

Buds of Gloire de Dijon Rose Turning Yellow (*H. A. B.*).—We cannot think the buds on Gloire de Dijon on a south wall have damped-off; they have more likely dried off. Perhaps the base of the buds is attacked with mildew, or it may be that the roots are too dry. The Rose weevil will also at times eat the heart of the Rose buds and prevent them from opening. We could give more definite advice if we saw the buds, or had more information about the tree, soil, &c.

Oak Leaves Deformed (*Wm. N.*).—The swellings and contortions near the leafstalks are caused by a Cynips. You will find a grub of the insect in each swelling.

Exhibiting Roses (*An Irish Subscriber*).—The Dublin Rose Exhibition on the 29th of June is too late, except for budded stocks of Roses. You cannot thwart or retard Nature advantageously. You should have removed carefully some of your trees in February; that is the most legitimate way of retarding, combined with later pruning. All you can now do is to pull off your forward buds, and thin out the side buds to one or two of different sizes on each twig. This is a matter requiring judgment and great experience. It requires a knowledge of the habit of each particular Rose, and of the length of time under ordinary weather, with help, each formed bud takes to arrive at development. Such a Rose as Général Jacqueminot would arrive at development at least a fortnight or three weeks before such a Rose as Duchesse d'Orléans. Roses may legitimately be hastened by stirring the ground, by mulching and watering, and by placing squares of glass over the mulching. I do not know of any maker of Rose exhibition-boxes. Get the Rev. S. R. Hole's book on "Roses, How to Grow and Show Them," and at page 214 you will see

full instructions. Any village carpenter could make them.—W. F. Radclyffe.

Liquor from Tanners' Pits (*S.*).—The water from tan pits we have no doubt would be very useful for watering all kinds of vegetable crops, but we do not think it would be suitable for plants in pots. Pour it between rows of Cabbages, Cauliflowers, Broccoli, Beans, Peas, Asparagus, Scarlet Runners, Rhubarb, &c. For watering plants, 1 oz. of guano to a gallon of water forms a good liquid manure. Strain before use, as some parts of the guano are less soluble than others. Let it stand about twelve hours.

Herbaceous Calceolarias (*Idem*).—They may be propagated from cuttings. Take off the side shoots from the base and insert them in sandy loam and leaf soil. Place them in a cold frame or under a hand-light, keeping them close, moist, and shaded until rooted; then admit air freely. Shift the plants as required into larger pots, and remove them to the greenhouse in October. The best plants are obtained from seed sown in a pan placed in a shady spot and covered with a hand-glass. The old plants are of no use, and the cuttings are not half so good as seedling plants either in growth or flowering.

Tricolor Pelargoniums (*Idem*).—The cuttings are best taken off before the middle of August, any time from February until then will do. They strike very well in a gentle heat up to June, and afterwards in a cold frame. We use a compost of two parts loam from a pasture where the soil is of a good, rich, light nature, paring it off about 1½ inch thick, and laying it up for six months, then chopping it up rather fine, and adding one part of well-rotted dung—old dry cow dung being preferred—half a part of sandy peat, half a part of charcoal in pieces from a pea to a hazel nut, and one-sixth of silver sand, the whole well mixed.

Himmelstern.—"*N. H. P.*" wishes for the botanical name of the bright blue flower which grows so abundantly on elevated ground in Germany, where it is called Himmelstern. Some description of the plant should have been given by our correspondent, and a reference to some well-known plant which it resembles. It may be a local name for Polemonium cæruleum, which is called in German *Himmelsleiter;* or Iris germanica, which is *Himmelslilie;* or Gentiana verna, which is *Himmelstangel.* If any of our readers know the plant inquired after, we hope they will state it to us.

Seedling Gloxinias (*E. H.*).—All Gloxinias are handsome, but yours are not equal to many well-known varieties. The Vine leaf is not diseased; the rough elevations at the back are rather indications of vigour.

Seedling Fig (*Richard Jameson*).—The seedling Fig is large and promising, but the flavour of the specimen sent is not so good as we think it will be when grown in a drier atmosphere and later in the season.

Seedling Pansies (*Centurion*).—Some years ago the Pansies and Geraniums you have sent would have been valuable, but they are now much behind many we have. Those of one colour, or with white and yellow grounds with one colour on the edge of the petals, are show Pansies. All others, irregularly marked, and so on, are Belgian or fancy.

Names of Plants (*M. Smith*).—Primula cortusoides. (*Macbeth*).—2, Euonymus vulgaris. (*New Subscriber*).—1, Jasminum Sambac; 2, Tecoma jasminoides; 3, Jasminum revolutum. (*T. S.*).—Echeveria secunda. (*J. Woodleff*).—Your plant is Sisymbrium Millefolium, and your Fern frond appears to be a young state of the Lady Fern (Athyrium Filix-fœmina), and if so, it is hardy. (*East Sussex*).—Maxillaria Harrisoniæ. (*J. Smythe*).—Muscari comosum, the Musk Hyacinth. It is quite hardy. What you mistake for stamens are the very long tubes of the perianth, the enlarged tips being the unopened limb of the perianth. (*Lady King*).—We are quite unable to tell from such a poor specimen. On a second or third attempt we think that very possibly the plant may be a broad-leaved state of Psoralea pinnata. (*D. M.*).—Asplenium fontanum, found all over southern and middle Europe. (*G. D.*).—4, Hovea Celsii; 5, Solanum jasminoides; 6, Very possibly Mandevilla suaveolens, but no flower received. (*M. H. M.*).—The Night-scented Stock, Matthiola tristis. (*A Subscriber*).—Erythrina Humei. (*Macbeth*).—1, Ornithogalum pyramidale; 2, Euonymus vulgaris. (*G. E. Worden*).—The Fern is Mohria thurifraga; the Dendrobium is D. primulinum; the Oak-galls sent are curious, and certainly not common. (*Pro. tem.*).—1, Pernettya myrtilloides; 2, Jasminum revolutum; 3, Gladiolus segetum. (*Poplar*).—Kalmia angustifolia; will succeed in a cool greenhouse, and may be placed out of doors in summer. (*A Reader*).—Pyrus Fennica. Your Conifer must be a remarkably fine specimen. (*A. J. Hogg*).—Rhododendron ferruginenm, native of the Alps and central Europe generally. (*R. R. S. H.*).—Indigofera decora.

POULTRY, BEE, AND PIGEON CHRONICLE.

GAME BANTAMS.

No one relishes more than I do a little good-humoured fun, even when the fun is poked at myself; so that I relished much Mr. Entwisle's poke at me on the Game-Bantam subject last week, for it was both good-humoured and in good taste. Five years ago last January! That is a long time since, Mr. Entwisle!

> "Five years have past; five summers, with the lengths
> Of five long winters."

The world is wonderfully changed since then; it is a different world in Europe now, and in England too, to what it was then. Why, every German thinks himself a changed and greater man since even this time last year; and everybody knows that our Prime Minister thinks it his duty to alter his opinion, as he has done in a year's space, on grave matters of state policy. So that in "fancies—things light as air," I am not ashamed to have altered my opinion since January, 1866. My feeling in regard to Game Bantams is, that I still much dislike to see short-legged, Bantam-shaped birds, only Game in plumage, and that not over-good; but that long-legged, slender-shaped, gamey bird I do like, and breed with much pleasure.

Perhaps, as I mentioned one name before, because I best knew the birds bred by that exhibitor, I will mention another name, and the mention of which will, I am sure, gratify my good-humoured reminder of past opinions. On asking one of the most important members of the poultry world, and one whom and whose opinion I greatly respect, "Who now have the best Game Bantams?" I received this reply—"The best that are exhibited come from Crosland's and Entwisle's yards."

My fancy is comprehensive enough to make me wish to keep almost all varieties of poultry were I able, and certainly all the varieties of Bantams. I still greatly love the older sorts, and long to have a turn at Sebrights, and may, perhaps, another year. The Blacks are, again, fascinating little fowls, and Mr. Entwisle has my best wishes for his success in bringing, as I hope he will be able to do, thoroughly good-shaped Piles, Brown-breasted Reds, and Duckwings to the show pen, good in shape as well as feather.

I quite agree with him, that among Game Bantams the smallest birds are not the best, they are apt to be short in the leg and thick in form; neither are the largest best, but now and then comes a medium-sized bird, that has the unmistakeable gamey shape and carriage.

I hoped to see Stroud Show, but had to call in the doctor, who forbad travelling, and hence I had a great disappointment, for shows are scarce in the west of England, and I should have met men as well as birds at Stroud.

I own to have thoroughly altered my opinions as to the non-profitableness of Bantams. Fowls that if at liberty need corn but once a-day and lay abundance of eggs must be profitable, even not considering for the moment the cleansing of a garden from insects, and the Game, being so active, are among the most profitable, as also they lay well, and the surplus cockerels, or less good pullets, are as good eating as Partridges if dressed in the same way.

"He that never changed his opinions never corrected his errors," says the old proverb. If that be true, and I think it is, I have scored-out one of my errors. I conclude with the sentiment, I might say toast, for it is teatime—"Success to the Bantam fancy, and the Bantam fanciers."—Wiltshire Rector.

A SOUTH AMERICAN POULTRY FARM.

I have as yet to see the first statement giving the facts and figures of profitable poultry-raising on a large scale. Perhaps there might be some who have achieved success in this line, but we are led to believe that misfortunes are more plentiful than the fortunes acquired from the manipulations of this particular stock. I have tried my hand at the business, although on a limited scale, and can show figures giving me a profit of 300 per cent. on the capital invested. There is no known reason why it cannot be managed in an extensive way, and with just as good results, provided it is entered into knowingly and understandingly.

I propose to describe a poultry farm, where fowls are kept by the thousand, and whose proprietor counts his gains therefrom proportionately. It is situated in the southern extremity of Chili, South America, where the rainy season, of six months' duration, is as detrimental to the well-being of all fowl kind as the rigours of our own winters, and where great care and skill is very essential to satisfactory results.

Senor Don San Fuentes commenced his operations in poultry with a stock of two hundred hens and eight cocks, to which he has added by natural increase from year to year, until now he has about six thousand. Their range is unlimited, as his farm covers 3000 cudras, equal to 7500 acres. To every fifty hens and two cocks is given a house of their own, of which there are six or seven hundred on the place. These are placed 200 feet apart each way, thus isolating one lot from the other.

These houses are very cheap affairs, and are made by erecting two forked posts, 8 feet long, and distant from each other 15 feet. On these rests the ridge pole. On both sides of the centre post, 10 feet distant, a trench is dug a foot in depth. Then small poles are placed for rafters, one end in the trench and the other tied to the ridge pole, 2 feet apart. Then another set of poles, tied crossways, also 2 feet equidistant, and the framework is complete. This is covered over with thatch, which is found in great abundance, and to be had for the cutting. The only framework about the house is the doors at the ends, both of which are 4 feet by 6, and contain each a window

pivoted in the centre of the sash, to be opened or shut as the requirements of ventilation demand. Each house has its complement of twenty boxes for laying, placed under the eaves, and partly concealed by bundles of straw.

Near the family residence is a large building, devoted to the storing of grain and eggs; a nursery for sick hens; a long room for hatching, and another for slaughtering purposes. In the sick room are arranged a series of boxes, each large enough for the comfort and convenience of its solitary occupant, who is there placed and treated for its malady with as much care as if its value were dollars instead of cents, and with such skill that the ratio of deaths has been only 1 in 280.

The sitting department is also provided with boxes, some three hundred in number. Here all are brought from their respective coops as soon as their incubating proponsity shows itself, and plac d upon their quota of eggs. Food, water, and a large supply of sand and ashes, are provided, and the sitting hen not allowed to leave the room until she takes her young brood with her.

The clutches are then "doubled up"—that is, two broods given to one hen, and the chickenless one sent back to her coop to resume her egg-laying. As soon as the young chicks are discarded by their mother they are taken to their future home, fifty in each lot, and the old ones back to their respective localities.

The fowls are fed three times per day, and their diet so arranged as to always present a variety, although oats are their staple article of food, and always before them in unlimited quantity. To-day it will be Indian meal, made into a stiff dough and given hot; to-morrow, barley; next day, boiled potatoes, mashed and mixed with pork scraps and bran—corn broken in a coarse mill, and so on in rotation; adding from time to time a dead horse, or some other cheap and inexpensive animal food. Burned bones, pounded shells, and lime, are supplied in profusion. These, with what the fowls gather on their foraging expeditions, produce a wonderful supply of eggs.

During the rainy season they are not allowed to leave the coop, except the day be exceedingly pleasant, and then only for a short time. They appear to bear their confinement remarkably well, and with hardly any decrease in the quantity of eggs. While confined they have an extra allowance of animal food.

The attendants requisite to the care of these 6000 fowls are one man and four boys. The houses are thoroughly cleaned once a-week, and the interiors whitewashed every three months. Every morning each lot of fowls undergo a careful inspection, and anyone found moping or otherwise indisposed is immediately taken to the hospital and cared for; and seldom is it but that the indisposition is cured, and she takes her place back again as well as ever. At evening the boys go the rounds to gather up the proceeds of the day's labour, which will average two hundred dozen per day the year through.

The profits from one year's business amounted to 11,000 dols. The sales are seventy-two thousand dozens of eggs, and nearly 20,000 chickens and two-year-olds. Mr. Sau Fuentes expresses himself as being perfectly satisfied with the result obtained, and intends to double his stock each year, until every 200 feet of his extensive farm has its house of fifty tenents.—C. F. Pearce, *Freetown, Mass.*—(*Rural New Yorker.*)

THE OWL PIGEON.

Most fanciers of Pigeons during some time have kept, and probably have derived an especial pleasure in breeding, this admirable little toy of the dovecote or aviary, for without a doubt it is one of the favourites; and although these birds may not rank quite so high as his majesty "King Carrier," his serene highness the noble and towering Pouter, the richly-feathered and chaste little Almond, or the aristocratic and highly-esteemed Barb—still, for general character and figure, there are few varieties which excel these exquisite little frilled-chested favourites.

Owls have many recommendations, and therefore have found, and still continue to find, much favour; for besides their neat, compact, pretty form, and their almost unceasing activity, they are seldom "caught napping," or seen to disadvantage; their sprightly little rotund forms are generally on the stir, and they not only display their beauty of outline, but they show off to unusual advantage, and they always make the most of their diminutive size by the "airs and graces" in which Nature so frequently permits her pigmy creatures to indulge. Be it known to those who have not already made the discovery, that this pretty Pigeon is a proud stuck-up little creature. The Carrier may extend his graceful neck to its utmost stretch, and thus look down upon most of his brethren; the Almond may proudly strut among his fellows, and boast of his gay attire; the Pouter may inflate his crescent-marked crop, and thus eclipse from view the smaller fry; or the glossy Barb, with massive head and ruby spectacles, may play his attractive part amongst a pleasing group of other rare beauties; but the gaiety in Pigeondom is not replete unless the vivacious little Owl is promenading there, for he has much to be proud of, and if there, is sure to make his presence known, strutting, flying, billing, cooing, prying all about, in and out, and back again directly; with head thrown back he trips along apparently conscious of the important position which he holds in the Pigeon genus of which, it is said, he is the representative "from Afric's burning clime." However, whether in a show pen, an aviary, or in his peregrinations on the housetops, he is sufficiently acclimatised, and certainly thrives well in old England. He is gay and full of life—now saluting his partner with profound bows and Platonic assurances, and, like a true lover, not attempting to conceal from his love the ruffled state of his throbbing breast. He fully displays the frill or goffered front with which he is so finely bedecked; but to see him, perhaps, to the best advantage is at the time when he is dancing attendance around his mate and running her to nest; he then, as with most other Pigeons, shows off to the greatest advantage.

Owls, speaking generally, are of a strong and vigorous constitution, and they are remarkably active birds; they are also good breeders, and good flying birds too, for when allowed their liberty—the larger and more robust and hardy kinds especially—they have proved that the homing faculty is well developed, and that, whilst possessing great powers of flight, they are enabled to discover their homes from long distances. Of course if, like most of the valuable Pigeon tribe, it falls to their lot to be doomed to long incarceration within an aviary or Pigeon-loft, they soon lose that keen instinct so remarkable in them; and such would be the case, too, with the more noted homing Pigeons were they subjected to similar imprisonment. However, just now is not the time to discuss the flying properties of the Owl in detail, or we could adduce ample testimony of their capabilities as voyageurs, but these facts we pass by, as we wish to draw attention more particularly to their qualifications as show birds of perfect character.

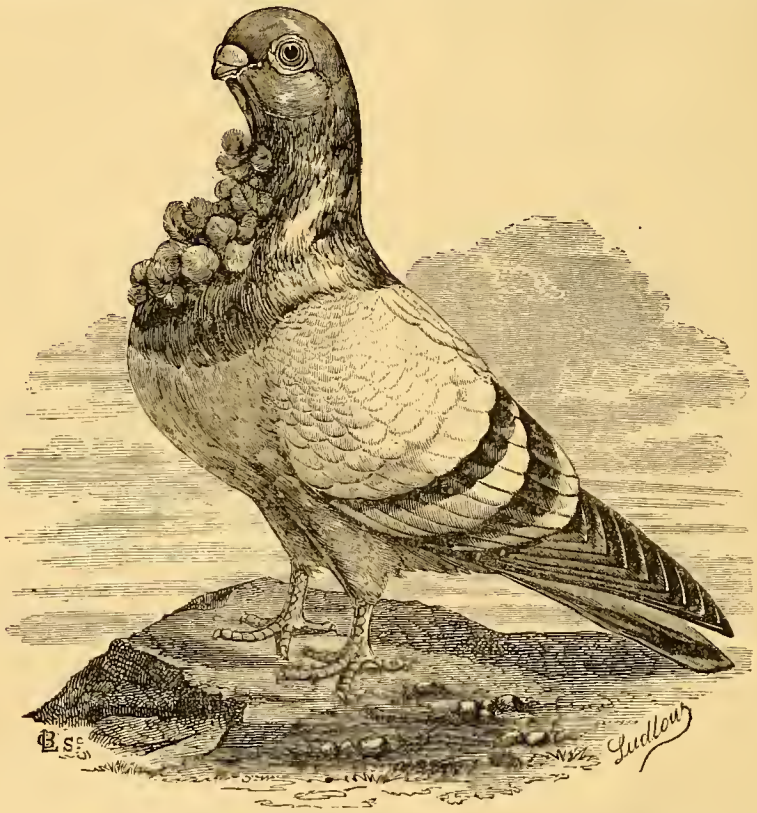
First, then, it is perhaps advisable to state that there is a division in the Owl family, yet to our minds the line of demarcation appears to be so indistinct that we confess that confusion is too often the consequence of such severance, and it often leads to unpleasant results in adjudicating upon the merits of the two classes; for, as is well known, there are English Owls and foreign Owls, and the happy medium also, resulting from the admixture of the two recognised stocks, but (unfortunately for the judges) size chiefly constitutes the difference between the two families. The English breed are much the larger birds, but should possess all the good qualities of the imported stock, which birds unquestionably are far more attractive than their English brethren, for these, in comparison, appear to be a coarser and more hardy kind. It is not our desire, however, to raise up one standard by knocking down another, nor do we wish to exalt the merits of one variety above those of any other, for we admire them all, and must leave to our fellow fanciers the task of selection, and the propriety of discussing the wisdom of the decision to which we have alluded, whilst we pass on to notice the points of excellence of the Owl.

Owls are of various colours, and amongst the most attractive and numerous varieties are Blues, Silvers, Whites, Blacks, Reds, and Yellows. Various interminglings of those enumerated have resulted in strange and varied pieds, splashes, Blacks with white tails, and Whites with black tails, silver tails, blue tails, and other and multifarious freaks of nature too numerous to particularise, many of which may lay claim to great beauty, but not being of pure blood are not regarded as permanent varieties, consequently they simply bear the name of the stock from which they sprang.

Owl Pigeons should be small birds, compact in form, short from the breast to the end of the tail. They should have nicely rounded heads, and a very short and curved beak, which should form a segment of a circle in continuance of the line of head. From near the end of the lower beak should fall, in nearly a straight line, a loosely-hanging feather-covered skin, or "dewlap," terminating at its lower extremity in the gullet, from which should protrude evenly on either side a large and full-feathered frill or ruffle. This ornamental frontispiece should extend low down the breast and finish-off in a sort of rose or

radiation of feathers. The carriage of the bird must be erect, the breast very prominent, the neck rather short but well arched, wing-butts well defined, and across which the bird should be broad, and suddenly tapering at an acute angle, thus giving a marked wedge-shaped appearance. The legs free from feathers, not too long; the feet small, and the bearing chiefly upon the toes. The eyes in all those sorts enumerated should be of an orange-red colour, except the Whites, and their eyes should be dark, apparently all pupil, and known to fanciers as a "bull eye;" the fleshy lash small, even, and light-coloured. We have now given our views of the essential qualities of a perfect Owl. All the sub-varieties to be of value should answer to the foregoing general description, colour only constituting the difference between them.

Blues should be true Blues, and not faded representations or go-between Blues and Silvers; they should be pure and uniform in colour consistent with brightness; dingy Blues we object to. To use a common fancy phrase, we might say "powder, blue," but as there are so many shades of powder blue, the term seems out of place. It may be that such misapplied phrase originated from the fact of Blues emitting a bluish dust from their feathers; but if it is thus derived, it is equally without force or application, as all Pigeons when healthy should cast off a "bloom," or dust; so that, being common to all kinds, has no special affinity to or identity with any one of them; therefore the term, like the bloom to which we have alluded, being a superfluity, should be cast out. The term powder blue we do not like, but powdered blue is more expressive, and when used in describing the lighter-coloured Blues is not so inappropriate, as the necks and breasts of this kind really seem as though a white powder had been sprinkled thereon, and it is probable that powder blue, so often used, is simply a corruption of the long-adopted phrase, powdered blue. Well-matched birds of the latter kind are very attractive and uncommon in appearance, but the fancier must not confound them with the true Blues of uniform colour, as the two varieties are very different when placed in comparison with each other. Clear, pure, and uniform should be the colour throughout thighs, breast, back, and sides of wings; the latter, of course, must possess two black bars. The tail has also a band of black near to its extremity; the head and neck are of a darker hue, the neck richly lustrous with varied colours, which terminate



in a line on the shoulders. These are the esteemed qualities of Blues.

Silvers are almost colourless on their body, their necks only being slightly tinged at the lower extremity with semi-toned tints, but in harmony with their delicately-coloured feathers, the bars on the wings should be nearly black, clearly marked, and narrowly formed. A black band also should be upon their tail as in the Blue.

Whites must be pure unspotted white with dark eyes.

Blacks should be as black as possible, but as yet the jet black has not been obtained. These birds are too apt to come of a blue black; probably it may be the powder-blue making its way to the surface. Be this as it may, we should like to procure them more of a true black.

Reds and Yellows must be of a pure colour throughout. Each of the latter kinds is very scarce; they are generally of a larger and much coarser kind; indeed, perfect, or we may say even mediocre, specimens are seldom seen at our shows. They cannot successfully contest the palm against Blues, Whites, Silvers, and Blacks; but where numbers of meritorious specimens are congregated for prize competition, the high qualities of the exquisite little Whites are almost sure to lead to an award in their favour, for not only are they, as a rule, of superior head qualities, but they are generally smaller birds, which latter is an essential point, but this point is far too often looked for whilst greater and more important qualities are wholly ignored.

Owls, we should have said, are good breeders, and feed and rear their young well, and we advise those who have made such birds a study to still continue to do so, and whatever others they may add to their hobby, let some of the stock be Owls.—Birmingham Columbarian Society.

VOYAGE AND ARRIVAL OF FEATHERED EMIGRANTS TO NEW ZEALAND.

The *Otago Witness* gives an interesting account, by a fellow passenger of the feathered emigrants, of the arrangements made on board the Warrior Queen for their reception:—"The whole of the deck house, except that part appropriated to the ship's galley, was," he

says, "fitted up for the purpose, and a prettier sight we never saw than when every cage contained a little songster, whose cheerful chirrup and gay plumage made a delightful accompaniment of sight and sound. A variety of improvements had been made in the construction of cages for conveying the partridges, which on former occasions had been mostly a failure. In their efforts to rise they generally destroyed themselves by knocking against the top of the box or cage, and to avoid such mishap on this occasion the boxes were padded with a lining of strong canvas stretched across the inside of each box about half an inch from the wooden top. A dark compartment was also made at one end of the box, so that the birds might have a kind of artificial cover, and it was curious to note how, upon the entrance of a person into the deck house, they would immediately disappear under this 'cove,' so that the cages all round had the appearance of being tenantless. This contrivance to suit their shyness, however, preserved them in health and strength, and no fresh birds could possibly have been in finer condition or plumage during the whole of the voyage than the partridges thus enclosed."

The commissariat demanded for these novel voyagers was both large and varied. It consisted, we are told, of 600 eggs, 5 barrels of flour, 2 barrels of pea-meal for German paste, 10 bushels of hempseed, 7 barrels of Canary seed, 6 bushels of wheat, 4 bushels of linseed, 2 bushels of rapeseed, 20 bales of compressed hay, 2 tons of sand, and 15 cwts. of carrots, besides many other little odds and ends to make up tempting dishes for songsters who showed signs of indisposition on the journey. Mr. Bills (who accompanied his family, and was never weary in attending to their wants) also brought with him a stock of worms kept in bran, and now and then he threw in one of these dainties to a sick robin, with much the same air as a nurse gives a little delicacy to a patient, and the robin snapped up the tempting dainty with a satisfaction which showed how thoroughly he appreciated the attention. It is to be regretted that many of these interesting birds (owing to impure water it is supposed) died on the voyage. "Perhaps," says the fellow passenger, "the most difficult and taxing part of Mr. Bills's task was the preparation of food for his large family. The number of dishes and mixtures rivalled those supplied by the cook for the cuddy. Larks, linnets, canaries, robins, and partridges, each required separate mixtures, varied to suit the changes in temperature and tastes of the particular songsters. Now and then a little green meat was required for a sick bird, and a blade or two of verdure was raised by sowing Canary or hemp in some crevice or corner of the deck-house. Sometimes a bird or two managed to get out of a cage and escape to the rigging. Generally the efforts made to catch such were unsuccessful, and during the night they would drop from the rigging into the sea through sheer exhaustion. On one occasion, however, a valuable little goldfinch was caught by a ship's boy. The bird was perched up in the rigging of the main mast, where it remained till roosting time. It being a beautiful moonlight evening and in the tropics, it was easily observed, and the boy went carefully up the rigging and skilfully caught hold of it while asleep, and depositing it in his bosom descended without causing it the slightest injury. The passage through the tropics tried the birds. Up to crossing the line very few were lost, but at this period of the journey a kind of diarrhœa (owing to some of the drinking water having been put in new pine casks) broke out amongst them, and carried off a great number of the small birds.

"Very cheerful (he adds) it was to hear their sweet notes trilling out on the wide ocean. Often in the night have we listened to the tender whistle of the blackbird, and in the early morn the song of the lark has greeted our waking moments, so that with such surroundings, and giving the reins to the faculty of imagination, we easily transferred ourselves to the borders of some peaceful homestead."

So much for the incidents of the voyage. It was, as may be supposed, a proud and happy moment for Mr. Bills when he landed at Otago with the greater proportion of the little creatures he had been commissioned to bring from the woods and hills of Sussex; and a very pleasant moment was it for all parties, not excepting the birds themselves, when the moment came for restoring them to their natural state of liberty, though not to their native woods and dales. The scene is thus described:—

"On the beautiful slope above the Botanical Garden, about nine in the morning, the wax-eyes had already congregated in great numbers, as if they were aware that something unusual was about to happen. They were not long kept in suspense, for suddenly a cage door opened and a flight of goldfinches streamed into the air, all strong on the wing, and keeping together; they circled round once or twice, and finally settled amongst the trees in the lower end of the valley. Then came a cage of fluttering chaffinches, and the wax-eyes are once more disturbed. Four months ago they chirped amongst the young oak trees of Stanmer Park, and others amongst their fellow voyagers lost their liberty on Lord Chichester's domain. But their freedom is regained, and they have selected a manuka with dense foliage as a temporary abode. A flock of twites, however, soon contended with them for the possession of the tree. These pretty little mountain linnets were taken on the Brighton coast, where they happened to be on a visit from their usual home in the far-north Hebrides. What strong-flighted bird is this, each of which has a little cage to itself? This is the gardeners' friend, the hedge sparrow, and Mr. Bills tells us that, if placed together, they would fight to the death. These birds, eighty in number, were trapped by a few market gardeners—as a rule, they cannot be persuaded to snare their insect-eating friend—and brought in by them to Brighton in the early morning, along with their fruit and vegetables. By this time these birds have found their way into many a garden in town. The redpoles, the serle buntings, and the reed sparrows soon joined their companions. The blackbirds and thrushes expected, no doubt, that it was their turn next; but if they thought so, they were doomed to disappointment, as they must wait patiently for a few days until their wings are flighted. As we left the spot we observed our little friends restlessly surveying their new quarters, and giving us the full benefit of their pent-up song. Later in the day Mr. Bills released the yellow-hammers amongst the bushes at Caversham, and left the skylarks, soaring above the Green Island fields."

And here we leave them, trusting that they will "increase and multiply" in the new world, as much as, or more, than the race of unfeathered bipeds to whose delight they contribute so largely!

BEE-KEEPING FOR COTTAGERS.

I HAVE not had an opportunity of seeing your paper for several weeks, or I should have replied to the somewhat mild stricture passed upon me by "SHEPHERDSWELL" in reference to the brimstone torch.

Allow me to say, in the first place, I was perfectly aware that by advocating the use of torches I should bring down upon my head the anathemas of several deservedly respected opponents of the practice; at the same time I have always looked upon the practice with considerable qualms of conscience, in fact with a similar feeling to that experienced when seeing an animal slaughtered for food; but until I read the letter appearing in your columns on the 11th ultimo, I was not aware of any better plan for keeping a stock of hives within reasonable bounds (likely to be within the cottager's means) than that which I recommended; and although I know Mr. Pettitt, I had no idea it was his practice to take honey for my neighbours in the manner mentioned by your correspondent (reserving to himself the bees), but such being the case, I am free to admit that it is by far the better plan, supposing the bees are not starved in the following winter, and I should be happy if he would take the honey of my surplus stock in the same manner.

With regard to the criticism of the Rev. C. Cotton, I think it is something to have raised a ghost, and I am sure I shall be delighted if my letter shall have been the means of inducing that gentleman to make his exit from the spirit world, and not only rejoice but edify us by his practical communications upon this interesting subject.—W. J., *Shepherdswell.*

ARTIFICIAL SWARMS—INTRODUCING LIGURIAN QUEENS.

I AM doubtful of my being able to find the queens of two black stocks in bar-frame hives to which I want to introduce two Ligurian queens. Could I proceed as if to make artificial swarms by taking a bar from the parent hive, placing it in an empty hive on the stand of the parent hive, as described in "Bee-keeping for the Many," but instead of leaving the bees to rear a queen, at the same time introduce the Ligurian queen in the queen cage? Or, would it be better to drive the bees from the parent hive to make an artificial swarm, then place it on the stand of another black stock, and introduce the Ligurian queen in that way?—W. L.

[Your best plan of proceeding will probably be to take out and look over every comb of the stock-hive until you discover the queen. Having done so, place the comb with the queen in a box near at hand. Now, choose one of the other combs well-filled with sealed brood appearing far advanced, which you put into a nucleus-box or a spare hive. If you can do so, add a frame containing empty worker-comb on either side of the brood-comb. Take two or three other combs and brush off the bees into the nucleus-box, endeavouring to secure as many young bees as possible. Close the nucleus-box with a cover of perforated zinc, and the entrance with the same, and remove the box within-doors until the evening. Put back the comb with the queen into the old stock, moving-up the other combs towards the centre, giving an empty frame at the side, leaving it on the original stand. The following day most, if not all, of the old bees which have previously taken wing will leave the nucleus which has been placed on a stand at some distance from the stock, to which they will return. The young bees never having taken flight will remain, and those also which are being hatched-out. You had better examine the nucleus in the forenoon, and if you find there are very few bees you

must again take one or more brood-combs and shake off the bees, taking the same precautions to avoid giving it the old queen. Either this or the following day you can introduce the Ligurian queen in a queen-cage, taking care to destroy royal cells if any have been commenced. You will find some useful hints in an article in reply to a correspondent on the same subject which appeared in our issue of June 1st.

Unless you are a sufficiently advanced manipulator to be able to discover the queen, all operations for the making of artificial swarms are attended with so much risk of failnre, that we should advise you not to attempt them.]

OUR LETTER BOX.

Diarrhœa in Fowls (*S. S.*).—There is no objection to your feeding unless it is the steamed wheat or maize. There is nothing in the dietary to cause the looseness. Impure water will often do it. Mix one-third powdered chalk with the ground oats, and let the water in their vessels be strongly impregnated with camphor. Look closely round their haunts, and see if there is anything of a poisonous nature lying about. For the disease you complain of to continue, is death to the fowls, but there is no reason why it should continue. It is essential that all droppings under the perches and about the places they frequent should be carefully swept up. Cold winds and sudden changes of temperature cause such disorders.

Cinnamon Cochins (*Amateur*).—The feathers you enclose are from a Silver Cinnamon hen, and are the right colours.

Imported Ducks (*Yorkshire Subscriber*).—So far as we can judge from your description, you have bought Muscovy Ducks. One thing only is against it, and that is the size; the smallest are larger than wild Ducks. You are, perhaps, somewhat deceived on this point. If you are not, and if they are really no larger than wild Ducks, they are very curious, and probably valuable. If they are Muscovy Ducks their value is above 5s. each.

Hamburgh Cocks' Combs Purple (*S. I. R.*).—It is more than probable the cocks are suffering from cold easterly winds, and from frosty mornings. It is not a satisfactory symptom. The treatment will be a tablespoonful of castor oil to each, followed by Baily's pills, or two pills of camphor the size of garden peas, every night. We should think the latter will be sufficient to cure them. The oil must be repeated at the end of four days if there is no improvement.

Stroud Show.—The third prize for Crêve-Cœurs was won by Mr. J. J. Malden, Biggleswade.

G. W. Cooper (*E. C.*).—As you very properly have set the law in motion against him it would not be fair to make any comments. Let us know the result.

Pigeon Concours (*W. H. B.*).—If the proposal is carried into effect it will be advertised; at present we know no more about it.

High-class Pigeons Laying Clear Eggs (*H. T. G.*).—This has been a usual complaint among high-class Pigeons and Canaries this spring, no doubt owing to the cold. In our own loft we have not yet raised one bird, but look for better success when the warmer weather comes.

Rearing Blackcaps (*S. N.*).—"Bechstein," p. 375, Bohn's edition, speaks of Blackcaps being reared from the nest on bread and milk. I have never kept one, but a friend who is well up in soft-billed birds says, finely-scraped lean beef mixed with its bulk of yolk of hard-boiled egg, fresh every morning, is a regimen "against the world" for Nightingales and birds of that class in captivity.—W. A. Blakston.

Young Carriers Dying in the Nest (*M. Green*).—We know of no remedy, but would recommend you to cross with birds of another strain.

Two Hen Canaries with one Cock (*Poplar*).—The eggs will be fertile, or ought to be. You will be able to determine for yourself by this time. If fertile, they will now be opaque on being held up to the light; if clear and transparent, throw them away. It is just possible they may be so, as the cock's death may have resulted from ill health, in which case the probabilities are in favour of the eggs being empty. The hens will bring up the young ones if there be any. Procure a new cock as soon as possible; introduce him for a short time at intervals, and permanently, as soon as the young ones can be removed, or you will have the next nest unfertile. It would almost be advisable to give all the young ones to one hen, and work the two hens as advised in my "Guide."—W. A. Blakston.

Canary Picking Itself (*H. S.*).—I should advise a thorough wash. Lather well with soap and warm water applied with a piece of soft linen rag; then rinse thoroughly with lukewarm water, and rough-dry with a hot soft rag. Place it in a cage, with a piece of flannel at the bottom, in front of the fire well exposed to the heat; it will soon dry. If you hesitate to attempt this, which requires somewhat careful manipulation, place as much lukewarm water in a hand-basin as will almost float the bird, just allowing it to touch the bottom with its feet. Cover with a handkerchief, to confine the bird and prevent the water being splashed about too much, and allow it to half-drown itself; then rough-dry as directed, and resuscitate. Give plenty of green food and free access to a cold-water bath. Some birds seem averse to bathing. Remove their drinking water from nightfall till the middle of the next day, and try them.—W. A. Blakston.

T. H. Kilshaw.—In answer to Mr. Norman's inquiry, we have received several letters, all stating that "T. H. K." had applied for poultry and Pigeons, but was heard no more from, as prepayment was required.

Rabbit Scab-nosed (*A Subscriber*).—The scab on the nose of your Rabbit is easily cured by applying a lotion of tobacco water prepared from half an ounce of "Limerick roll" soaked in a teacupful of hot water, and when cold applied to the parts affected, avoiding the eye as much as possible, for the pain is acute. Another remedy is effectual:—Mix a little whale oil and sulphur into a thin paste and apply every other day—say three times. Even cuco will do if the complaint is taken in time. Rabbits are liable to this scurf, or "mange," if not kept clean and well ventilated, or if fed upon too much dry food. A little sulphur sprinkled once a-week on the top of the bran in the feeding dish is a preventive.

Bees in a Chimney (*Bee*).—We have had no experience in removing bees and combs from chimneys or flues. Perhaps some of our correspondents could give advice as to the best mode of effecting your object.

Hard Water (*K. M. H.*).—For drinking it is preferable to soft water. For household purposes, washing, boiling, &c., a little carbonate of soda added removes the hardness.

METEOROLOGICAL OBSERVATIONS,

Camden Square, London.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude 111 feet.

Date. 1871. June.	9 A.M. Barometer at 32° and Sea Level.	9 A.M. Hygrometer. Dry.	9 A.M. Hygrometer. Wet.	9 A.M. Direction of Wind.	9 A.M. Temp. of Soil at 1 ft.	In the Day. Shade Temperature. Max.	In the Day. Shade Temperature. Min.	In the Day. Radiation Temperature. In sun.	In the Day. Radiation Temperature. On grass	Rain.
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
We. 7	29.962	50.6	46.2	N.	54.8	58.8	45.2	100.2	42.3	—
Th. 8	29.919	50.4	46.3	N.	54.4	57.2	46.0	88.8	45.2	—
Fri. 9	29.927	51.1	49.5	N.	53.8	61.8	45 8	93.6	45.6	0.013
Sat. 10	29.986	55.2	53.0	E.	54.2	70.1	49.4	123.6	49.1	0.280
Sun. 11	29.988	52.1	51.0	E.	55.0	70.1	49.0	113.2	50.5	—
Mo. 12	30.054	50.8	50.0	N.E.	55.3	72.0	47.0	112.4	49.8	—
Tu. 13	29.981	54.6	52 8	E.	56.0	66.1	47.2	92.9	50.8	0.140
Means	29.974	52.1	49.9		54.8	65.2	47.1	103.5	47.6	0.433

REMARKS.

7th.—Dull and cold all the morning, rather brighter in the evening.
8th.—Cold and dull till 5 P.M., then fine till 8 P.M., but dull in the evening.
9th.—Dull till latter part of afternoon, dull with rain in evening.
10th.—Rather dull till near noon, then fine, but heavy rain at 3.40 P.M. fine evening.
11th.—Dull till noon, then very fine, evening dull.
12th.—A very similar day, except that there was a thick mist at 9 P.M.
13th.—Dull in the morning, rain began early in the afternoon, and continued to night, change of wind and warmer.

A remarkably cold week, with steady barometer and northerly winds. —G. J. Symons.

COVENT GARDEN MARKET.—June 14.

The improvement we noticed in our last has not been so well supported as we expected, doubtless owing to the ungenial weather which prevailed. All descriptions of hothouse produce are quite equal to the demand, and prices a trifle lower. Foreign goods, both fruit and vegetables, are largely supplied.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples ..... ½ sieve	3	0	to 6	0	Mulberries ..... lb.	0	0	to 0	0
Apricots ..... doz.	2	0	3	0	Nectarines ..... doz.	10	0	20	0
Cherries ..... lb.	1	0	2	0	Oranges ..... ℔ 100	6	0	10	0
Chestnuts ..... bushel	0	0	0	6	Peaches ..... doz.	12	0	24	0
Currants ..... ½ sieve	0	0	0	0	Pears, kitchen ..... doz.	0	0	0	0
Black ..... do.	0	0	0	0	dessert ..... doz.	0	0	0	0
Figs ..... doz.	4	0	8	0	Pine Apples ..... lb.	6	0	10	0
Filberts ..... lb.	0	0	2	0	Plums ..... ½ sieve	0	0	0	0
Cobs ..... lb.	2	0	2	6	Quinces ..... doz.	0	0	0	0
Gooseberries ..... quart	0	6	0	8	Raspberries ..... lb.	0	0	0	0
Grapes, Hothouse .... lb.	5	0	10	0	Strawberries ..... lb.	3	0	6	0
Lemons ..... ℔ 100	6	0	10	0	Walnuts ..... bushel	10	0	16	0
Melons ..... each	4	0	8	0	ditto ..... ℔ 100	1	0	2	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes ..... doz.	4	0	to 6	0	Leeks ..... bunch	0	4	to 0	6
Asparagus ..... ℔ 100	4	0	8	0	Lettuce ..... doz.	0	3	1	0
Beans, Kidney .... ℔ 100	2	0	3	0	Mushrooms ..... pottle	1	0	2	6
Broad ..... bushel	0	0	0	0	Mustard & Cress .. punnet	0	2	0	0
Beet, Red ..... doz.	2	0	3	0	Onions ..... bushel	7	6	10	0
Broccoli ..... bundle	0	9	1	6	pickling ..... quart	0	0	0	0
Brussels Sprouts .. ½ sieve	0	0	0	0	Parsley ..... sieve	8	0	6	0
Cabbage ..... doz.	1	0	2	0	Parsnips ..... doz.	0	9	1	0
Capsicums ..... ℔ 100	0	0	0	0	Peas ..... quart	1	0	8	0
Carrots ..... bunch	0	0	1	0	Potatoes ..... bushel	2	0	4	0
Cauliflower ..... doz.	6	0	10	0	Kidney ..... do.	3	0	4	0
Celery ..... bundle	1	6	2	0	Radishes .. doz. bunches	0	6	1	0
Coleworts .. doz. bunches	3	0	6	0	Rhubarb ..... bundle	0	4	0	6
Cucumbers ..... each	0	6	1	0	Savoys ..... doz.	0	0	0	0
pickling ..... doz.	0	0	0	0	Sea-kale ..... basket	0	0	0	0
Endive ..... doz.	2	0	0	0	Shallots ..... lb.	0	6	0	9
Fennel ..... bunch	0	3	0	0	Spinach ..... bushel	2	6	0	0
Garlic ..... lb.	0	8	0	0	Tomatoes ..... doz.	2	0	3	0
Herbs ..... bunch	0	3	0	0	Turnips ..... bunch	0	9	1	3
Horseradish .... bundle	3	0	5	0	Vegetable Marrows .. doz.	0	0	0	0

POULTRY MARKET.—June 14.

The supply of poultry now increases daily, and prices suffer in consequence. Buyers rejoice, sellers fret. Larger prices than common have been made, but only in consequence of scarcity, and the enlarged arrivals will bring us to a fair average.

	s.	d.	s.	d.		s.	d.	s.	d.
Large Fowls	4	0	to 4	6	Pigeons	0	9	to 0	10
Smaller ditto	3	0	3	6	Rabbits	1	4	1	5
Chickens	2	0	2	6	Wild ditto	0	9	0	10
Ducklings	2	0	2	6	Hares	0	0	0	0
Goslings	5	6	6	0	Guinea Fowl	0	0	0	0
Pheasants	0	0	0	0	Grouse	0	0	0	0

WEEKLY CALENDAR.

Day of Month	Day of Week	JUNE 22—28, 1871.	Average Temperature near London. Day.	Night.	Mean.	Rain in 43 years. Days.	Sun Rises. m. h.	Sun Sets. m. h.	Moon Rises. m. h.	Moon Sets. m. h.	Moon's Age. Days.	Clock before Sun. m. s.	Day of Year.
22	Th	Spalding Horticultural Show.	73.6	48.8	61.2	17	44 af 3	18 af 8	43 af 7	22af11	5	1 34	173
23	F	Cambridge Easter Term ends.	72.7	47.1	59.9	17	45 3	19 8	52 8	44 11	6	1 47	174
24	S	Midsummer Day.	74.1	48.9	61.5	15	46 3	19 8	6 10	morn.	7	2 0	175
25	Sun	3 Sunday after Trinity. [8.30 P.M.	73.0	49.1	61.1	20	46 3	19 8	20 11	4 0	☾	2 13	176
26	M	Meeting of Royal Geographical Society,	74 3	49.2	61.7	20	46 3	18 8	aftsr.	24 0	9	2 26	177
27	Tu	Royal Horticultural Society's Nottingham	72.8	48.2	60.5	15	46 3	18 8	55 1	42 0	10	2 38	178
28	W	Coronation Day. [Shew opens.	73.7	49.1	61.4	16	46 3	18 8	18 3	1 1	11	2 51	179

From observations taken near London during forty-three years, the average day temperature of the week is 73.5°, and its night temperature 48.6°. The greatest heat was 93°, on the 27th, 1826; and the lowest cold 34°, on the 28th, 1844. The greatest fall of rain was 0.80 inch.

EARTHING-UP POTATOES AND OTHER CROPS.

"To earth-up or not to earth-up" is a question which has been often before the gardening world, and may be so again, as it is difficult to dismiss an opinion once formed. It is not unlikely that the advocates for earthing-up, and those for not earthing-up, may both be right as regards their respective localities. The subject calls for some remarks, and all the more, because at page 399 the Editors condemn the practice, while "R. F.," at page 407, approves of it. "Wyeside," at the first-mentioned page, may be regarded as neutral, for he asks the reason why Potatoes are earthed-up, and then gives a valid reason—namely, to prevent the tubers becoming green. He seems, however, to doubt whether that is a sufficient reason for the practice. He also mentions one or two other benefits resulting from earthing-up, and at the same time points out its evils. This is so far fair, but the propriety of earthing up is left in doubt.

In entering on this question I avow myself at once an advocate for earthing-up Potatoes, as well as all the Cabbage tribe that have to stand the winter, excepting in certain situations; and one of my reasons is, that by throwing the ground into ridges a greater amount of surface is exposed to the action of the atmosphere, especially in winter; while the earthing-up of Potatoes, as "Wyeside" admits, prevents that greening of the tubers which spoils them for the table, and it often happens the finest are at the surface. Now for its evils. "Wyeside" compares earthing-up to placing an umbrella round the plant's waist. I grant this comparison is well founded when the earthing-up is imperfect, which, I am sorry to say, is often the case, but the system ought not to be condemned on that account; nay, if earthing is well done it meets the very requirement which "Wyeside" puts against it—viz, it coaxes the rain down the stems to the collar of the plant instead of throwing it off. It is now going on for half a century since a mode of earthing-up Potatoes was explained to me, and I have not seen a better. It was to work up the earth in such a way as to leave a sort of slight furrow where the Potatoes grew, and not to close the earth tightly around them in the ridge-fashion of which your correspondent complains. I fear instructions of this kind in matters of detail are not so often given as they were at the time to which I have referred: hence the imperfect way in which this and some other operations are performed. I may also observe that in earthing-up Broccoli, Brussels Sprouts, and the like late in summer to stand the winter the ridge was made as pointed as it could be, the object being to protect the stem from being shaken by the wind, and to give it assistance. There are but few cases in which the omission of earthing-up is likely to be beneficial, but there may be some, and it is only fair to mention them.

Where Potatoes are grown on a dry, shallow, sandy or gravelly soil, and in a neighbourhood where but little rain falls during the growing period, it may be advisable not to earth them up; on the contrary, if the ground could be scratched over, and a covering of short grass or other litter were put over it to prevent evaporation, I believe much good would be effected; but as this cannot well be done on a large scale, it is necessary to depend on slight hoeings, so as to break up the surface-crust after heavy rains until the Potato haulm has so far grown as to shade the ground, when the purpose will be accomplished. In very shallow soils of the kinds just referred to, and in dry years, the crop is seldom good, although in a showery season it is often a fair average, and the mere fact of earthing-up or not makes but little difference in the result. Where the soil is so shallow as hardly to allow sufficient depth for the roots after earthing-up it would, perhaps, be better not to resort to it; but in the case of all retentive soils I would on all occasions advise it, as the action of the sun and air on rough unpulverised clods must be beneficial to future crops as well as to that which is growing. It often happens that on such a soil there may not have been time to completely break up these clods before the Potatoes were planted, hence the utility of after-tillage, and the ridge is better than the flat system for accomplishing that purpose.

If earthing-up Potatoes were detrimental to the field crops, I should think there are close-inspecting and inquiring minds amongst the many hundreds who are engaged in their culture, and that if it were not considered beneficial it would long ago have been abandoned. I have never seen any serious fracture of the roots caused by the plough, such as "Wyeside" complains of, unless the work has been very roughly done. Now and then the roots of a Potato, perhaps out of the row a little, may come in the way of the ploughshare, but the generality certainly do not by the time they are earthed-up. From the almost universal adoption of the practice it would be rash to condemn it, especially as it is of such long standing, without some just reason for doing so; and as "R. F." affirms that a better crop follows earthing-up than would otherwise be the case, it ought not to be too hastily condemned by those who have not had proofs of an adverse character. For my own part I have adopted the earthing-up system so generally, that I am not prepared to speak with confidence on the merits of the non-earthing plan, but I believe in the former. If, however, I were asked where it might with advantage be omitted I would say, Only in the cases which I have already mentioned; in all others I am its advocate, stipulating, however, that instead of forming a pointed ridge enclosing the stem of the Potato, along the top a slight gutter should run, which would allow all rain falling on the stem to run down to the roots; and the space in the centre between the rows being rendered very small, no great harm is done by the uncovering of the roots. It will also often happen that by the time the roots reach that point—say 15 inches from the place they started from—the top will have attained sufficient dimensions to afford the necessary shade, and no harm is done, but, on the contrary, a benefit is gained.—J. Robson.

I have made several experiments, but to give a satisfactory explanation as regards the lessons of experience is a doubtful

matter. However, I have always succeeded better with earthing than without. Then as to the why of the difference, I am led by fact to the conclusion, that the hoeing and earthing should be done as soon as possible after the plants are up, otherwise the damage done to them will be irreparable—at least, such has been my experience. It appears to me that by hoeing, the soil becomes too much disturbed from the collar of the plant, and, if it is not returned almost immediately, the young fibres suffer from exposure to such an extent that it is hopeless to look for more than a failing crop.

The mode of cultivation which I have adopted after a great number of experiments, and which with me appears to answer well, is as follows:—As soon as the crop of the current year is taken, and the whole collected into heaps, the ground is thinly worked over and raked, to allow the seeds of weeds which by any means may have found their way to the ground, to strike root. At a later period in the autumn the ground is deeply dug, and it is allowed to lie in that state until the time of planting. I then take two garden lines and draw them parallel to each other, and 2 feet 6 inches apart, except for Ashtops. I commence at the end of the first with a spade, which I drive down to the full depth of its blade, and by a pressure on the handle move the soil to the depth of 10 or more inches. I then withdraw the spade to something like half that depth before taking out what remains upon it. In this manner I take out the first trench, and by working backwards leave about 4 or 5 inches of loose soil at the bottom of the trench. The soil from the first trench is taken by a barrow to the other end of the plot to be used for the last row. The first trench being now opened, manure is put into it, and by means of a garden fork is pointed into the loose soil at the bottom of the trench, and that having been done with care the seed Potatoes have what I think something like a comfortable bed to rest upon. They are planted, the soil from the next trench is put carefully over them, and the same is done throughout. The plot when finished is flat, and the newly-worked ground is the only means by which the row can be traced.

As regards the second, and I may say the controverted part of the work, I perform it in this way—first, I carefully hoe over the whole of the ground, choosing dry weather, and as soon as the weeds have flagged so that they will not strike fresh root, I take the spade and repeat the same process between the rows as that adopted at planting time; only in this case I have to take out two spits in width instead of one as at the first operation, and I give each row of plants its spadeful of fresh earth newly dug from the ground, and in a moist condition. This being done by a proper turn of the hand so as to raise the lower leaves of the plants, and the spade being brought out edgewise upwards, a finish is given to the work which can be equalled by no other plan. Besides, it will be seen that by this means the whole of the ground becomes spring as well as autumn-dug, and that several inches of loose soil are left between the ridges for the fibres to work into.—Starbeck.

[We shall very readily insert reports of well-conducted experiments upon this subject, which has now been sufficiently discussed.—Eds]

THE FRUITING OF SEEDLING TREES.

Everyone knows how very long is the time between sowing the seed of a fruit tree and getting fruit from it, so that few men after fifty years of life have the courage to propagate seedlings. I believe the time may be shortened most materially, and that a very few words will explain the correct way of growing seedling fruit trees. I have been led to the idea by the difficulty I have had in getting some grafted trees into bearing, and by observing that precisely the same sort of growth occurred in some trees that had originated in suckers from old ungrafted trees. In almost all these cases, whether Apple, Pear, Plum, Peach, or Orange, the wood was thorny; and though I cut back and used the cuttings for scions, all had the same thorny and fruitless character.

However, in experimenting upon a set of seedling Peaches, some were allowed to grow wild, some steadily pinched-in, some cut-in closely and pinched, and some trained as single rods; all these last fruited as soon as the shoot got beyond the thorny part of the stem. It then occurred to me that it was only necessary to get beyond this part of the growth as quickly as possible. This is done by encouraging the growth of the young seedling to a single upright shoot, and then using the *point* of that shoot as a scion on a strong stock; then the shoot from this scion is to be again trained at full length, and its point again used as a scion. In this way a shoot may be got having buds 20 feet or more from the root in a couple of years. The old seedling trees may thus be grafted with the scions from themselves, but it would be better to graft them in their third year with a scion taken from an intermediate grafted tree. It may be necessary to stop the leader to be used as a scion by the end of August, to ensure its ripening, but this will not seriously affect its nature.

I can speak from experience of the success of the process in the case of Peaches and Oranges; and some Plums, Pears, and Apples I have not yet tried. But I may also mention that I have in this way got over the difficulty with thorny Pear trees.

The trees that I could not get to fruit had been grafted with scions taken off too near the root, the sorts being new ones. By selecting the scion near the root, or far from it, a grafted tree would be produced that would bear only after a long interval or quickly, according to the gardener's will. At any rate, what has been said shows the importance of choosing the points of leading shoots as the scions for forming dwarf trees.

I should very much prefer having some independent experiments tried to trusting entirely to my own, and therefore hope some one or more of the Royal Horticultural Society will take the matter up, and in the meantime any discussion this statement may provoke will be of service to horticultural science.—W. Kingsley.

WHAT IS BROCCOLI?—No. 2.

It would be tedious to enumerate the many varieties of Broccoli now in cultivation; I shall therefore only name those which I have found the best.

Snow's Superb Winter White.—This is a very superior kind, and closely allied to the Cauliflower; in fact, I very much question whether it is a true Broccoli, as a sowing made after midsummer will head in the following summer—indeed, if sown in August and protected like Cauliflowers it succeeds them. I am convinced, though I have included it in a list of Broccoli, that it is a late form of Cauliflower. It is a most excellent sort when it can be procured true, is of dwarf habit, having broad leaves with short petioles. The leaves are kept closely about the head, so that it is self-protecting. The heads are large, compact, white, and equal to the best Cauliflower. It has one fault, however, and that is, it is not hardy. Sow early in April, and again at the beginning of May. The plants from the first sowing should be planted in a warm sheltered spot, and they will commence heading in December. Those from the second sowing will come in during January and February if the weather be mild.

Osborn's Winter White.—This is also a near relative of Cauliflower, and, like Snow's, comes into use in succession according to the sowings. It is very distinct and dwarf; leaves pale green, broad, with short petioles. The heads are large, close, and white, and are well protected by the leaves. It is more hardy than Snow's, but none of the early-heading kinds of Broccoli will withstand the severity of a winter like that of 1870-71. Sow early in March for heading in December, and again early in May for heading in January and February.

**Backhouse's Winter White Protecting.*—This is, undoubtedly, a true Broccoli, hardier than either Snow's or Osborn's, and earlier than either by ten days or a fortnight. The plant is dwarf; leaves large, closely set, entirely protecting the head, which is large, white, compact, and in flavour equal to Cauliflower. It is the best and earliest of all the true kinds of Broccoli. Sow early in March for heading in December, and again in the second week of April.

The three preceding are the best which I have grown for heading in December, January, February, and sometimes March.

Malta.—A kind not now in some catalogues. Dwarf, compact-growing; heads medium-sized, white, and close. It comes into use early in March, and is a good old sort, and hardy. Sow at the beginning of April. This kind is very difficult to procure true. It is the type of what a Broccoli should be as regards the plant, having a short stem. There is said to be an improved kind of this.

**Veitch's Spring White.*—This is evidently a select stock of the old Spring White. Leaves large; habit dwarf; heads medium-sized, white, and compact. It heads early in March, and is the best of early spring kinds. Sow early in April.

**Dilcock's Bride.*—Habit dwarf; leaves broad, hardy; heads large, compact, white. It is a very fine sort, heading at the close of March and beginning of April. Sow at the beginning of April.

Penzance Early White.—Habit tall; leaves narrow and long;

heads medium-sized, compact, and white. With me it will not stand an ordinary winter. In a warm situation I have no doubt it is excellent. In use early in March, sometimes in February. Sow at the beginning of April.

**Mammoth.*—Habit dwarf, the stem being short; heads very large and compact; plant very hardy. In use in April and May. Sow early in April. There is now an improved kind of this hardy Broccoli, said to be equally hardy, and surpassing it in size and quality. It is named Elleteon's Surprise.

Melville's Dalmeny May.—Habit dwarf, hardy: heads large, compact, white. It comes into use in May, and when true—but it is difficult to procure it so—it is a capital hardy kind. Sow at the beginning of April.

**Wilcove Late White.*—Habit dwarf; leaves closely set; heads large, very fine, even, firm, and white, coming in at the close of May, earlier or later according to the season. It is not very hardy, but is for quality the finest late Broccoli in cultivation. Messrs. Veitch's Wilcove Improved is an excellent true stock of this most desirable kind. Its only fault is its not being sufficiently hardy for cold situations, though it succeeds in all but very severe winters. Sow in April.

**Lauder's Superb Late Goschen.*—Habit dwarf; leaves broad, closely set, and well protecting the head, which is very large, close, and firm, white and excellent. It is hardy, not having been injured by last winter's frost; commences to head about the middle of May, and continues until the middle of June. It is the hardiest and best of all the late Broccolies, being little if at all inferior to Cauliflower. It deserves extensive cultivation. I intend to plant under a north wall or on a north border, and hope to have heads late in June, which is about the time I can have Cauliflowers in these northern parts under the best of treatment. Sow in April.

There are many other kinds of Broccoli, but I have named those which I have found best. If there are any better I shall be glad to hear of them.

The times of sowing are given in noticing the different varieties, but much must be allowed for seasons. As a rule I sow the spring kinds about the second week of April; but if the weather be then cold and the ground very wet, I consider it preferable to wait a few days rather than sow under these circumstances. This sowing, late as it may appear, is in every way better than very early sowing, as the plants from the latter very often become stunted, and do not make a growth equal to plants sown later and grown without check. Besides, if the weather should be genial, the plants from early sowings make a very strong growth, attain a considerable length of stem, and they seldom survive a severe winter. This season, owing to the late spring, I did not sow until the beginning of May. In an ordinary spring I sow about the 10th of April.

The soil for the seed beds should be light and moderately rich, and choice should be made of a piece of ground not for some time occupied by any of the Cabbage tribe. It should also be open. The seed should be sown rather thinly and covered lightly with fine soil, raking even. Water will be necessary, but it need not be given if the beds were watered before sowing. There is generally enough moisture in the soil for these plants in a young state.—G. Abbey.

THE CUCUMBER DISEASE.

It is with great diffidence that I approach this subject, seeing that so many excellent growers have failed in finding a remedy for the disease, and, moreover, have anticipated and repudiated all probable suggestions. But, as I have a triumph to record, I hope it will prove not without interest to your readers, and that it may assist in solving this knotty question. I have, as far as I am concerned, no great experience of the disease, nor do I wish to have, although several years ago it made its appearance in a house of which I had the charge. This took place towards the end of the season, consequently no great efforts were made to get rid of the evil, and in the following year I was not there to use the preventives I thought necessary. My opinion at the time as to the cause was that there was too much moisture both in the soil and atmosphere, and insufficient ventilation, especially in the morning. I am aware that the contrary rule to this has been acted upon and failed as a remedy, but I have not yet seen it proved to my satisfaction that those which I have named have not been the first causes.

It has been stated that this disease is similar to the Potato disease, and I believe at least that both are caused by the same agency. We all know that the Potato disease is most prevalent in wet soils and in wet summers. Both the Potato and Cucumber are what may be termed succulent plants, and both by their roots and leaves absorb a great amount of moisture. We must, however, also bear in mind that they exhale a great amount of vapour, and unless there is sufficient dryness and ventilation to carry it off they must re-absorb it, and, as in the case of animals, disease will be the result. As Cucumbers flourish in heat and moisture, I believe these conditions may be, and often are, carried too far without due regard to ventilation, and in my own opinion they are the cause of the disease, and no after-treatment, however careful, can stop it, unless, indeed, like the cattle plague, it be stamped out.

I suppose the question that all wish to come to is, How to stamp it out when it has set in? I cannot illustrate that better than by reciting a case which has come under my own observation, where, I believe, the disease has been thoroughly stamped out. A friend of mine, Mr. Black, gardener to W. Clough, Esq., Clifton House, York, on entering the gardens about eighteen months ago, found the disease prevailed very much in the Cucumber houses. During last winter he had every particle of soil and dust removed; every rafter and all the walls and floors well scraped, washed clean, painted, whitewashed, and strongly fumigated with sulphur. The plants were started gently, not at all strongly fed nor excited into rank growth at first; and now he has a house of Telegraph Cucumbers that is a sight worth seeing, they being in beautiful health, and exhibiting not the least sign of disease. It may be urged that it is too soon to form a decision; the disease may yet appear, but I do not think it will. I believe he has conquered it. If it should prove otherwise I shall be most happy to correct my hasty conclusion.

The question suggests itself to me, Why cannot this disease be got rid of? I believe that it is so infectious that the germs may lurk about in every nook and cranny, and where Cucumbers have to be grown all the year round, summer and winter, it would be impossible to escape it. But let there be an entire cessation for a time to stamp it out. Do any of those who are baffled by the disease mean to assert that if they had a new house away from the scene of their former disasters, fresh soil, and fresh plants, the disease would follow them? It would be curious indeed if it did. Well, as they may not be able to afford that proceeding, the best plan would be to renovate the old structures, paint them well outside and inside; scour, scrape, and whitewash, and well fumigate with sulphur. I think then, like my friend Mr. Black, they might reasonably expect a prevention of the disease.—A Yorkey.

ARAUCARIA IMBRICATA AT BICTON.

A box has been sent to the office of The Journal of Horticulture in hopes that some account of the contents may be of interest to your readers. It will be perceived that one of the specimens is an example of the male catkins and female cones of Araucaria imbricata on the same branch. The tree from which the branch was taken has still about thirty catkins and twenty-five cones upon it. The present is not the first time I have observed a similar phenomenon, having witnessed both sexes on one tree in the Earl of Shannon's pinetum at Castle Martyr, near Cork, in the spring of 1867, when I concluded that the tree is not dioecious, as has been generally supposed, but is monoecious, and only requires time and proper treatment to develope its true character.

In the former of those instances the subsoil was removed from under the roots of the tree in the previous autumn, and proper drainage and soil substituted; in the latter case the trees in the Araucaria avenue at Bicton were heavily top-dressed with suitable soil last autumn. Soon afterwards twenty of them showed an immense number of catkins, and throughout the winter and spring months they have been truly beautiful, the trees being equally studded over with pale lemon-coloured catkins in clusters of from two to six. One of the clusters sent can only give a slight idea of the trees when seen properly furnished in their winter garb, and now, when the catkins have changed to pale cinnamon, the contrast is no less striking and beautiful.

I hope, as time goes on, to see other trees producing the sexes in company. Meanwhile it would prove interesting to readers of The Journal of Horticulture to hear of trees in other places which may be producing catkins and cones together. At present there are here sixteen trees which are producing cones only, each to the number of from 20 to 160, one tree only carrying the latter number. It is strange that all these cones

have appeared during the past spring, and it remains to be proved whether cones which appear in spring equal in fertility those which show in the autumn. I have always preferred to see cones in the autumn months, such cones being more likely to produce perfect seeds in the autumn following. The others I have generally found unsatisfactory. Last spring having been dry and very favourable to the dispersion of pollen, I hope to have a harvest of fertile cones; and should your readers feel interested in the subject, I may at a future period make known the result.—R. Beddie, *Bicton Gardens.*

[Many will like to know the result.—Eds.]

ROYAL HORTICULTURAL SOCIETY.

June 21st.

Coming just before the great country show at Nottingham, coming also just after a series of great shows, it could hardly be expected that this would have proved a very attractive Exhibition. The subjects invited were few, the amount offered in prizes was certainly small, and it might have been expected that the Exhibition would likewise have been small. Not so, however, for there was for a miner Show a rather large array of subjects, though in none of the classes was the competition very strong.

Classes 1 and 2 were for six Zonal Pelargoniums, the former being for amateurs, the latter for nurserymen. Amongst amateurs, Mr. J. Catlin, gardener to Mrs. Lermitte, East End, Finchley, was first with plants from 3½ to 4 feet in diameter, trained on circular wire trellises. The plants were in excellent bloom, and consisted of The Bride, blush white; The Clipper, Oliver, and Lord Derby, various shades of scarlet; Rose Rendatler, pink; and Monsieur Rendatler, salmon. Mr. Filce, gardener to J. Statter, Esq., Clapham Park, was second with smaller plants, of which Excellent, Highgate Rival, and Chieftain were well grown and bloomed, and, not being much tied out, presented a better appearance than plants less naturally trained. Mr. Weston, gardener to D. Martineau, Esq., Clapham Park, was third. Mr. Wheeler, gardener to Sir F. Goldsmid, Bart., M.P., also exhibited. In the nurserymen's class there was no exhibitor. In that for six double-flowered Pelargoniums, Messrs. Carter took the first prize with exceedingly well-grown plants in splendid bloom. The varieties were Wilhelm Pfitzer, Victor Lemoine, and Ville de Nancy, scarlet; Marie Lemoine, Madame Rudolf Abel, and Madame Michel Buchner, rose.

In the amateurs' Class 4, for six Variegated Zonal Pelargoniums, Mr. Goddard, gardener to H. Little, Esq., Cambridge Villa, Twickenham, took the place of honour with excellent compactly-grown examples of Lady Cullum, Lucy Grieve, and Sophia Cusack, Golden Tricolors; Charming Bride, Impératrice Eugénie, and Italia Unita, Silver Tricolors. The second and third prizes went respectively to Mr. Welsh, gardener to D. Rutter, Esq., Hillingdon, and Mr. R. Goodwin, gardener to Mr. Bird, Drayton Green, Ealing. In the nurserymen's class Messrs. F. & A. Smith, of Dulwich, were first with beautifully-grown plants of Prince of Wales, Lady Cullum, Rev. Joshua Dix, Sir R. Napier, Sophia Cusack, and Miss Burdett Coutts. Second came Messrs. E. G. Henderson & Son, of St. John's Wood, with fine plants of Lass o' Gowrie, Peter Grieve, Mrs. Grieve, and Charming Bride. Mr. Stevens, Ealing, was third with large well-furnished plants. Mr. T. Petridge, nurseryman, Uxbridge, sent half a dozen plants trained to single stems, 15 inches high, and forming flat heads 18 inches to 2 feet in diameter. These, when better furnished with leaves, would be effective if placed well below the eye; at present they cannot be said to be so. Mr. Townsend, gardener to J. C. Mappin, Esq., Clapham Park, sent half a dozen Gold and Bronze varieties.

In Fuchsias, Mr. James, gardener to W. F. Watson, Esq., Isleworth, took the lead with plants between 3 and 4 feet high, and in good bloom, but with a great preponderance of light kinds. Starlight, with white sepals, and Mrs. Ballantine, with a double white corolla, were two of the best. Mr. Weston, who took the second prize, had very well-bloomed plants, about 4½ feet high, of Enoch Arden and Conspicua. Mr. Townsend was third. The only exhibition in the nurserymen's class came from Messrs. Wright, Turner Road, Lee, and consisted of plants about 3 feet high, and blooming very freely. The best twelve in 8-inch pots came from Mr. James; the plants, from 2 to 3 feet high, were in excellent bloom, more especially Starlight, Daniel Lambert, Avalanche, Gipsy Girl, and Killiecrankie. Mr. Weston was second. On the whole, the Fuchsias were not equal to those we have seen in previous years.

Of Palms Mr. Williams, of Holloway, sent noble specimens of Latania borbonica, Chamærops Fortuni, Phœnix sylvestris, Sabal Blackburniana, Areca lutescens, Chamærops humilis, Thrinax elegans, and Jubæa spectabilis. Mr. Williams had the first prize, and the second went to Mr. Burley, Hereford Road, Bayswater, who had also some very fine specimens of Chamærops, Corypha australis, Livistonia, &c. From Mr. Bull, who was third, came Areca Baueri; Enterpe edulis, a very graceful Palm; Latania rubra, conspicuous by its red leafstalks and red-edged and ribbed leaves; Areca lutescens; Ptychosperma regale, &c. An equal first prize was given to Mr. J. Linden, of Brussels, whose exhibition arrived late, but was of especial merit both for the choice character and the beauty of his specimens. Among them were noble Phœnicophoriums, viridifolium being of a dark green, Calamus lauatus with white downy stems, Cocos elegantissima with pale green foliage and singularly elegant, Dæmonorops cinnamomea, Corypha nivea, and Welfia regia. In the amateurs' class Mr. G. Wheeler had a first prize.

For baskets of plants arranged for effect, and not exceeding 3 feet in diameter, Miss Williams, Upper Holloway, was first with a Dracæna in the centre surrounded by Palms, Ferns, Marantas, &c., and edged with Isolepis, Ferns, &c. The second prize went to Mr. G. Wheeler, gardener to Sir F. Goldsmid, Bart., M.P. Mr. Macintosh, Hammersmith, also sent a basket.

In the miscellaneous class Mr. Denning exhibited a fine group of Orchids, taking the first prize. Among these were several beautiful kinds of Cattleya, Aërides, Saccolabiums, Vanda tricolor and Batemanni, the latter a very fine plant; Cypripedium Veitchii with three large flowers; Dendrobium Bensoniæ, snow white, orange at the base of the lip, with two dark crimson blotches; this had three fine spikes, and had a magnificent appearance; Thunia Bensoniæ; Epidendrum vitellinum majus, very fine; its kindred in colour, Lælia cinnabarina; the new Cypripedium niveum; Lycaste Deppei; a fine mass of Dendrobium Parishii; Barkeria spectabilis, and Dendrochilum filiforme, the last two also very fine. The second prize was awarded to Mr. Bull also for a group of Orchids, among which were good specimens of Aërides Lobbi and odoratum, Cypripedium barbatum, Lælia purpurata, Vanda tricolor, and Thunia Bensoniæ. These were backed with a very graceful Encephalartos villosus and several Palms. The third prize went to Mr. Williams for a remarkably fine collection of Palms, Yuccas, Cycads, Ferns, and other fine-foliaged plants. Among them Todea superba was extremely fine. So, too, was Hymenophyllum demissum; and Anthurium Scherzerianum, though a little passed, was still a splendid specimen.

Messrs. Lee, of Hammersmith, sent a large group of fine-foliaged and flowering plants, including several fine Palms. From Mr. Macintosh, Hammersmith, came a nice collection of Antirrhinums.

Mr. William Paul, Waltham Cross, sent his splendid new Zonal Pelargoniums—viz., Diana, Sir John Moore, Ianthe, Iago, Wellington, and Haidée. Some of these were perfectly dazzling. Mr. W. Paul also exhibited a basket of Waltham Bride, white-variegated, with pure white flowers. Messrs. E. G. Henderson & Son contributed a numerous collection of Tricolor Pelargoniums, also one of bedding Petunias, and a basket of Pelargonium elegantissimum, a small variegated kind of the Oak-leaved race. Messrs. Carter & Co., of High Holborn, sent a basket of the pretty feather-like Trichinium Manglesii, and Messrs. Dick Radclyffe & Co. a neatly-filled Fern case.

Fruit Committee.—G. F. Wilson, Esq., F.R.S., in the chair. Messrs. Barr & Sugden sent a collection of eleven varieties of Lettuce, which the Committee resolved into five varieties—Covent Garden, Long Stander, William Robinson, Early Yellow, and White Dutch, the latter being the old White Cabbage, were the same. The Swede's Head and Red-edged Victoria were the same. The Cloche, Tom Thumb, and Stone Tennisball were all the old Tennisball. All the Year Round was a darker green, but otherwise similar to White Cabbage, and White Tennisball was smaller and firmer than White Dutch. Mr. James Plumbridge, gardener to Henry Vallance, Esq., Farnham Royal, Bucks, sent a basket of Sir Joseph Paxton Strawberry, remarkable for size and beauty. They were grown in the open ground without glass from first year's plants planted in November, 1870. They were unanimously awarded a special certificate. Mr. J. Douglas, gardener to F. N. Whitbourn, Esq., Loxford Hall, Essex, sent a dish of President Wilder Strawberry, a large, handsome, bright scarlet variety, with a high aroma of the Hautbois. It was awarded a special certificate. Mr. J. Douglas also sent a seedling hybrid Melon, which was not sufficiently ripe. Mr. Tillery, of Welbeck, sent dishes of large and handsome fruit of Dr. Hogg and Lucas Strawberries.

Floral Committee.—Mr. J. Fraser in the chair. There was on this occasion but a small number of novelties as compared with meetings earlier in the season. Mr. C. Turner, of Slough, had a first-class certificate for seedling Pink Godfrey, a pretty purple-laced variety; Mr. Turner also exhibited several other seedlings, of which Alice had a very chaste appearance. Mr. Nye, gardener to E. Foster, Esq., Clewer Manor, sent several new Show Pelargoniums. Pompey, with dark maroon top petals edged with deep rose, white throat, and orange scarlet and crimson lower petals, had a first-class certificate; as also Prelate, dark top, edged with rose, white throat, lower petals crimson, veined with dark crimson. From the same exhibitor came also Cæsar, Rosicrucian, and Achievement. Mr. George, gardener to Miss Nicholson, Putney Heath, sent several seedling Zonal Pelargoniums; and Mr. Petridge, nurseryman, Uxbridge, Blushing Bride, white-variegated, with blush white flowers, of vigorous good habit of growth; this received a second-class certificate. The same exhibitor also sent a collection of cut Antirrhinums and Golden Tricolor Pelargoniums, of which Salamander and Brilliant were good and bright-coloured. Mr. Knight, florist, Hailsham, exhibited climbing Rose Princess Louise Victoria, rose, edged with blush, said to be of robust growth and to flower in long succession. The flowers were not large, but evidently freely produced. Messrs. F. & A. Smith sent a number of new Tricolor Pelargoniums, and Mr. Eckford, gardener to the Earl of Radnor, Coleshill, Silver Tricolor Countess of Radnor. Some of these would have taken awards in former seasons, but it is difficult to

surpass the varieties we already have. Mr. Eckford likewise sent several promising seedling Verbenas; and Mr. Cripps, Tunbridge Wells, Lobelia Purity, a very fine pure white variety.

Messrs. Fisher, Holmes, & Co., Sheffield, had a first-class certificate for Thymus citriodorus aureo-marginatus, with the leaves distinctly edged with yellow, and which will, doubtless, prove useful as an edging plant. From Mr. Caunell, Woolwich, came Zonal Pelargonium Master Christine, which had before received a first-class certificate, and a stand of Verbenas. Mr. Bragg, Slough, sent stands of fancy Pansies and Pinks. G. F. Wilson, Esq., Weybridge, exhibited a very fine stand of Lilies, among which were several varieties of L. Thunbergianum, L. canadense flavum, L. umbellatum, &c. This gentleman is well known as an enthusiastic cultivator of the Lily tribe; and that he has a rich collection, and can grow it well, was abundantly testified by his specimens. For these a special certificate was given. Messrs. Barr & Sugden, of Covent Garden, also exhibited cut blooms of a number of Lilies and of Spanish Irises. From Mr. R. Parker, Tooting, came two varieties of Lilium fulgens; and the same exhibitor was awarded a first-class certificate for Passiflora vitifolia, or Tacsonia Buchanani, a brilliant-coloured Passion-flower.

Mr. Anderson, gardener to T. Dawson, Esq., Meadow Bank, near Glasgow, had a special certificate for magnificent cut specimens of Aërides Veitchii and Odontoglossum Alexandræ, the flowers of the latter of unusual size and beauty. Mr. Wilson, gardener to W. Marshall, Esq., received a second-class certificate for Phajus Marshalliæ with pure white flowers and a lemon-coloured lip. From Messrs. Veitch came cut specimens of Bougainvillea speciosa, grown in a cool conservatory along with Camellias, and quite equal in beauty of floral leaves to those from warmer structures.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.

The twenty-eighth anniversary festival of this Institution was held at the London Tavern, Bishopsgate Street, on Tuesday last, and was numerously attended. H.S.H. Prince Teck presided, and after the usual loyal and patriotic toasts had been enthusiastically received, he gave the toast of the evening—viz., "Continued Success and Prosperity to the Institution." In doing so he urged its claims for increased support, and while so many of the leading men in horticulture were connected with it, both as subscribers and in its management, it was not likely any aid bestowed would be thrown away. One great feature was, that the pensioners (numbering sixty), were allowed to live in any part of the kingdom; and another, the preference given by the rules to subscribers over non-subscribers, so that a man reaps what he has sown.

Mr. Wrench, the Treasurer, with whose name the toast was coupled, thanked the Prince for the manner in which he had advocated the claims of the Institution, and was not surprised that the Prince should feel himself a gardener, for there was rarely a horticultural exhibition at which he was not to be seen accompanied by the Princess. He had also, as usual, to return thanks to those good friends who had so liberally contributed to the decoration of the room—Messrs. Veitch, Lee, Turner, and Williams, and he wished he could have added the names of some contributors of fruit, the paucity of which he considered a disgrace. Before he sat down he had to mention that he had received a cheque for £50, accompanied with the following letter from Dr. Hogg:—

"Some time ago I undertook, after consulting a few friends, to raise a subscription for a portrait of Mr. Rivers, of Sawbridgeworth, as a recognition of the efforts he has made during a long life to advance the art of horticulture. Although, by desire of Mr. Rivers, no special efforts were used, and no direct application was made to anyone, a sum was raised which proved more than sufficient for the object intended.

"The portrait has been secured and handed over to the Trustees of the Lindley Library, at South Kensington, where it may now be seen suspended in the Council Hall of the Royal Horticultural Society.

"I have a balance remaining of £50, which I have proposed to Mr. Rivers to add to the funded stock of the Gardeners' Benevolent Institution, and I have now the pleasure, with his consent, to hand you a cheque for that amount.

"The only condition which accompanies this gift is, that a special paragraph be printed in all the annual statements of the Institution, setting forth the purpose of the gift as a testimony to Mr. Rivers.

"I trust that this may be the precursor of many such contributions to the funds of the Gardeners' Benevolent Institution; and that they who wish to honour those who are worthy of honour will not think their testimonial the less honoured because it has been given in aid of the comforts of their needy and suffering brethren."

The next toast was the health of the Chairman and that of Her Royal Highness the Princess Mary, the proposer remarking that ever since His Highness had come to England he had identified himself with horticulture, and now as President of the Royal Botanic, and Vice-President of the Royal Horticultural Society, he was still more closely connected with it. With regard to the Princess Mary, they knew that she not only took a great interest in gardening, but was better versed in its science than many of themselves. The Rev. Mr. Rogers in a humourous speech proposed "The Royal Horticultural and Botanic Societies," associated with the names of Mr. Bateman and Sir Walter Stirling, who each returned thanks. "The Secretary," and "The Ladies," having been given, the proceedings terminated, Prince Teck before departing closely examining the plants with which the room was tastefully decorated.

We understand that the total amount subscribed at the dinner was between £400 and £450.

As usual at these meetings, the Secretary placed the representatives of the press at the far end of the room, where it was impossible to hear the speeches from the platform.

SEEDLING GERANIUMS IN THE OPEN AIR.

The following from the north of Liverpool may, I think, be a novelty, and will therefore deserve a corner in your interesting Journal. In digging over a bed planted last year with Geraniums I met with about a dozen seedling Geraniums, growing vigorously, all having their second pair of leaves, some zonal-marked, and others plain. I have removed some to the greenhouse, and a few remain where the seeds first dropped. Here will be some strong constitutions for the far north (?)—L. Roscorla.

GARDENS FOR COTTAGERS.

We have lately had brought to our notice a very useful little book, written by the Rev. G. Huntington, Rector of Tenby, entitled "Amusements and Healthy Recreations for the People;" from it we extract the following:—

"I can say that, from my own observation, few things have done more good than the plan of allotting small portions of ground to working men, to be cultivated by them in their leisure hours. I once heard it objected by a churlish farmer, that if you give your labourers a piece of ground to till on their own account, they would reserve their energies for this object, and neglect their master's work. But the very contrary was found to be the case, for the best cultivated gardens belonged to the most laborious and conscientious labourers. In the town of Wigan, allotment grounds were assigned by two millowners, deservedly respected for the interest which they have always taken in the welfare of their operatives, and I believe that I am justified in stating that the results have been such as to satisfy the most sanguine hopes of these benevolent men.

"In a village in the East Riding of Yorkshire, the tenants to whom this boon had been granted, subscribed for and presented to their landlord a silver snuff-box, in token of their gratitude. I would respectfully suggest to all landowners, and employers of labour and capital, the expediency of adopting the allotment system wherever practicable; and I would urge it on the double ground that spade husbandry will improve the land itself, as much as the simple and inexpensive recreation of gardening will benefit the morals of the people. To townsmen the benefits are incalculable. No one who does not live amid the smoke and din of a large town can estimate the pleasure which a few flowers are capable of conferring, nor the influence which this taste has in rendering coarser pursuits distasteful. Many a time has a bunch of flowers brought a measure of happiness to a bed-ridden sufferer; many a poor seamstress, debilitated by late hours and a confined room, has found her sole pleasure in attending to the few little plants which somehow continue to live on the little balcony outside her window, in spite of the smoke, and fog, and malaria of the city. Many a time, as I can testify, has the flower garden kept the father of a family from the village alehouse.

"It may be objected that gardening is too laborious to be considered a recreation. Possibly it may be so to an agricultural labourer; but it would not, I think, be thought so by a shoemaker, or by anyone whose occupation is sedentary.

"To other pleasing incidents I may allude, although I am scarcely at liberty to mention names. I know of more than one gentleman's mansion where the produce of the greenhouse is devoted, year by year, to the purpose of decorating town churches. In an 'out-of-the-way' village in Lancashire, flower beds are regularly cultivated by young factory girls, who rise at four or five on Easter-day morning to adorn the church with the fairest, and sweetest, and choicest flowers they can produce. Again, I have seen village maidens welcome a happy young bride by strewing her way to church with flowers, as if to symbolise their good wishes, that flowers and not thorns, happiness and not cares, might be her portion. And who has

not noticed the carefully-attended grave, strewed with fresh flowers day by day, by some loving wife or sister, and planted with choicest shrubs? as though, to use the words of Keble, the mourners would be

> 'Gathering from every loss and grief
> Hope of new spring and endless home.'

"You all know that this has been done by our Queen ever since her great loss; and I believe I am right in saying that Her Majesty places a fresh wreath on the Prince Consort's tomb every anniversary of his birth-day, wedding-day, and day of his death."

FRUITING OF LONICERA AUREO-RETICULATA.

The following additions to your memoranda in regard to the flowering of this beautiful-foliaged climber have reference to its growth in more northern localities than any of those mentioned in your last two numbers. A pillar-trained plant bloomed in 1867 in the garden of John Russel, Esq., at Mayfield, Falkirk, and a plant grown by my sister on the south-east front of a house at Brodley, Carse of Gowrie, has flowered in each of the last four seasons. Some of these flowers have been succeeded by ripened berries, and I have three seedling plants reared from those of 1868, none of which have any reticulated markings or other symptoms of variegation, their leaves being all of a uniform green. The parent plant of these, which grows on the rich, strong, clayey soil for which the Carse of Gowrie is proverbial, has a much more vigorous habit, and is also more distinctly or richly reticulated than any I have seen on lighter and drier soils.—William Gorrie, *Rait Lodge, York Road, Trinity, Edinburgh.*

FRUIT GROWING COMMERCIALLY.

(*Continued from page* 423.)

The Plum.—Certainly none of our other hardy fruits present so great a diversity in colour, size, flavour, and appearance as the Plum. From the small sweet Damson upwards to the largest yellow or dark-coloured Plum, all grades of size and colour are represented; but there is some uncertainty in the bearing qualities of the finer sorts; thus in general the commoner ones will be found the most profitable, but the intending planter ought to ponder well before he embarks too extensively in planting Damsons, as the number of trees of this fruit has been multiplied so many times in the last few years that it is possible Damsons, as an article of profit, may have seen their best days. But we will dismiss this part of the subject, and as the character of different soils has been gone into while treating on the Apple, I may here say that although I have advised the Apple to be planted on the ragstone district, I would suggest the sandstone for the Plum; and some of those deep friable loams that are often met with in valleys or at the base of hills, plentifully interspersed with stones, are suitable sites for a Plum orchard, and I am not sure but now and then a good soil overlying clay might do pretty well; but avoid all shallow soils and also damp ones; and as shelter and other conditions, in which climate bears so extensive a part, have to be considered as well, we will dismiss this matter, and speak of these requirements to an orchard's doing well hereafter. At the same time I may say that some excellent plantations of Plums are met with now and then on soils overlying the rag, but I should call these exceptions, and not the rule in the matter.

Pears.—This fruit is not generally so productive as the Apple and Plum, as the finer kinds of Pears do not always bear well as ordinary orchard trees; the best, perhaps, for market purposes being the early kinds, and they usually bear best also, but as each district has its peculiar kinds, which practice has proved to be best adapted to that district, I will not attempt to give advice in this matter, but may say that in general the Pear likes a drier soil and situation than the Apple and Plum, and the tree roots deeper. But it must not be taken as a mountain tree; on the contrary, it requires shelter more than either of those named, and does best in dry situations sloping to the west, where the effect of the early morning sun after a frost in spring is less disastrous to the blossom; but the principal requirement insisted upon is dryness at the root, with plenty of depth of soil, not too highly manured, for although the latter may increase the growth of the tree, it is not always favourable to its fruitfulness.

The Cherry.—Unlike most of our other hardy fruits, this does not boast of a British origin, but is said to have been imported from the Asiatic side of the Black Sea, whence the Apricot also came. It has, however, been sufficiently naturalised with us as to be regarded as quite hardy, so far as enduring winter frost is concerned, but its bloom and early shoots are especially liable to damage by the late spring frosts we so often have, and one or two nights, or even one alone, is sufficient to blight the hopes of the expectant grower. A dry soil, but not a shallow one, seems to suit it best, and shelter from the direction in which cold winds may be expected is of great importance. Perhaps the best site for a Cherry orchard is one sloping to the west, as the sun is somewhat later in shining on the frost-stiffened blooms at the end of April or first few days in May, when we so often have "a nipper." I may here observe that I do not recommend such a site for all kinds of fruits, especially Apples, for, however beneficial it may be at blooming time, there almost invariably happens to be a high wind from the S.W. some time early in September, which does much harm to the fruit crop that is so exposed to its influence. But as the Cherries are usually gathered long before this time, no damage is done. The roots of the Cherry are also impatient of injury, and but little pruning of the top is advisable. It is, therefore, better not to till a Cherry orchard, but to sow it with grass seeds. It is also advisable to have this fruit only, in order that the number of trees together may be worth the expense of keeping a man to scare away the birds when the fruit is ripe. The character of the soil has, perhaps, more to do with the success of the Cherry than with that of any other fruit, and damp soils are unfit for it, while on dry, and otherwise suitable situations, the Cherry tree attains as great a size and lives as long as, or even longer than any of our other hardy fruits, and the oldest varieties we have seem not to be afflicted with constitutional debility, as some favourite kinds of Apples, Pears, and Plums. Mayduke Cherries still thrive vigorously, while Ribston Pippin Apples and Green Gage Plums are rarely met with in a healthy state. But the great drawback to Cherry culture is, as stated, the danger of our late spring frosts injuring, nay, even destroying, the expanded blooms, and rendering it hopeless to look for a crop; a portion may perhaps escape, but it is only one season in five or six that is a good one for Cherries.

Gooseberries.—The very indifferent positions often assigned to this fruit hardly give it that fair chance to do well which it deserves. Crowded underneath the spreading branches of larger trees, it has but a poor chance to do well, yet it succeeds even there. I am not sure but a plantation entirely of this fruit would pay as well as any; at all events, where a large extent of orchard is contemplated, a portion ought to be Gooseberries. They come in earlier in the season than any fruit, and give employment where that is wanted, besides which Gooseberries will grow on ground not so well adapted for Plums and other fruits. We often enough see good fruit produced on stiff retentive soils, and although wet ones cannot be called favourable, a moist atmosphere is certainly so; for the north-west of England, say Lancashire, and Scotland, produce better Gooseberries than Kent, although I am not so sure the crop is always so heavy, but believe it is. Two great drawbacks to the cultivation of this fruit are the injuries caused by small birds to the swelling buds in February, and now and then the serious attacks of caterpillar. There seems to be something difficult to account for in both these visitations; both being capricious and not easily arrested; the first evil being all accomplished in two or three days, and the latter often making its appearance all over a plantation at once, when the attack is a serious one. At times there is not a caterpillar to be met with, while in some seasons their attack is prolonged late into the summer, fluctuating between none at all and an almost universal attack. I may here mention that an old-fashioned cottagers' remedy, which I have been told by one who practised it for some forty years or more, and who asserted it never failed, is to scatter soot around the collar and stem in winter or spring, the idea being that the caustic properties of the soot were fatal to the larva of the caterpillar that might be deposited there, but the instructions were never to omit a winter's dressing. How far the return of fruit for market will repay this must be left for the grower to find out, but the remedy, or rather preventive, is a practicable one, and not by any means expensive.

Red and White Currants.—The first-named, especially, would seem to be better grown on the flat, rich alluvial soil bordering the Thames, than in Kent; nevertheless, good fruit is grown in places. A deep rich soil seems to suit them best, but not by any means a damp one. But this fruit is rarely allowed a site to itself, being often, like the Gooseberry, planted

under large trees, where it is surprising it bears at all, yet it does so when everything is favourable. The ordinary mode of pruning is objectionable to me; a too-close spurring-in causes all the fruit to be collected together, whereas if more young wood were left every year, the fruit would be more scattered, and in cases where it is advisable to let it hang long on the bushes, there can be no question but it keeps better singly than when in large clusters of bunches.

Black Currants.—Differing widely from the last in every way, this hardy fruit is benefited by moisture both in the air and at the root—not that it likes a stagnant wet soil, but it will thrive in a moister one than any of our other fruits, and those seasons when it fails to do well, arising from blight, I believe the cause to be lack of moisture rather than any defect of the bloom, as the plant, although accommodating enough to succeed tolerably well, even on dry stony places, is, evidently, not at home there, finer fruit being grown when it is planted near a rivulet, or other moist place. Its hardy and accommodating character, however, gives it a claim to notice, and some twenty years ago it was in great demand as a market fruit, but consignments to London from other districts than Kent have kept the prices down, so that it is not so popular as it was. As an undergrowth, however, it is, perhaps, the most profitable of any, and is otherwise deserving of attention.

Filberts and Cob Trees.—I confess not being sufficiently versed in the management of these to make any observations on them at all likely to be useful, but believe them to be the most profitable of all our fruits when well grown, and they seem to do best on the dry slopes, where a good depth of soil rests on a ragstone foundation, portions of the latter in a broken condition being found on the surface, and water only found at the depth of 30 or 40 feet, perhaps; but I am not well enough acquainted with the management of this tree to give any useful hints upon it, so must pass it over.

Strawberries.—There is no doubt but that better fruit of this might be grown in the neighbourhood of Maidstone than is done near London, only the carriage is attended with expense and serious loss to the fruit. The success of the growers in the immediate neighbourhood of London I attribute to the lavish application of manure; the fruit in general not being good-tasted, especially that grown where town sewage is used, but size and appearance are conditions of so much importance at market that all other things fade before them. Believing therefore that the supply for London is already met in the districts nearer where it is wanted, I should not like to embark in this branch at so great a distance. I may, however, say, that next to the deep alluvial soils of valleys by the side of rivers, the sandstone formation is most suitable for Strawberries, while calcareous soils, or those tending that way, rarely produce good crops.

Raspberries.—A fruit requiring special gathering for market, and it ought only to be sent there in water-tight vessels as the juices run out. It is often an unsatisfactory article both for buyer and seller, as the first-named often questions whether all the juice the fruit is swimming in when it reaches London was not gathered with it from the bushes; and certainly there is every scope for increasing the quantity by the same means as are adopted with milk; but as this is not our purpose, we may say that although the Strawberry, as before remarked, dislikes a calcareous soil, this plant luxuriates in one, and the best examples of good cultivation I have met with are of this kind; depth of soil and a little more moisture than most other kinds of fruit delight in, are also requisite to enable the plant to ripen off its later fruit to advantage.

Pruning.—From the foregoing remarks it will be seen that little has been said about the pruning of the respective trees, for the reason that the general mode adopted in the neighbourhood cannot well be improved upon, excepting, perhaps, in the case of old Apple and Pear trees, which I would certainly advise not to be allowed to go so long without using the knife, as I am of opinion that the severe pruning of an old tree is bad, and the popular opinion that no good arises from it is, certainly, too true, whereas if a slighter pruning had taken place some years sooner the tree might have been kept in better order, and there would not have been much occasion for those severe cuttings which we so often see; neither is it advisable to cut down and regraft old trees, as they very often fail some four or five years afterwards, that it would be better to replace the tree with a young one, or better still to replace the whole orchard, perhaps, for I am of opinion that many of the orchards met with have stood too long to be profitable. Of course, a tenant-at-will is unwilling to incur the expense of rearing a new one, and prolongs the old one year after year, with a decreasing produce. Assuming that some one had the privilege of dictating what would be the best way to perpetuate a certain amount of orchard for one hundred years, the question would be, whether it would be better to have three or four sets of trees during that time or not. My view would certainly be to have four, or, perhaps, one more than that. Of course, this proposition is liable to exceptions, as trees in some places show unmistakeable appearances of declining health at fifteen years, as much so as others do at thirty, and certain kinds, as the Hawthornden Apple, &c., canker and die off much sooner than others; therefore I would advise these kinds to be planted by themselves, so that the whole plantation could be renewed at once, and not piecemeal, as is the case where certain kinds dwindle away. In the pruning of young standard trees, the practice of the neighbourhood in not heading them down, or rather not cutting them in, the first year is, I think, excellent, and the moderate cutting they get afterwards is also good, and I may observe I am no advocate for that severe pruning of the Apple and Pear we sometimes see adopted, of cutting away every particle of new wood much the same as is done with the Filbert and Cob tree. In a very windy place it may be excusable, but I question whether, in point of utility, it matches the ordinary standard, with a well-proportioned head; while, in point of beauty, it is so far removed from everything that can be called ornamental, that the term ugliness is more appropriate; but we need say little more on the subject of pruning, beyond the general observation that a vigorous-growing young tree ought not to be so much cut as one of moderate growth, rather try and cut some of its principal roots a bit, to check its growth and throw it into a bearing condition. Long gross shoots of Plums might be shortened in summer if they can be got at, but Apples and Pears may as well finish their growth.

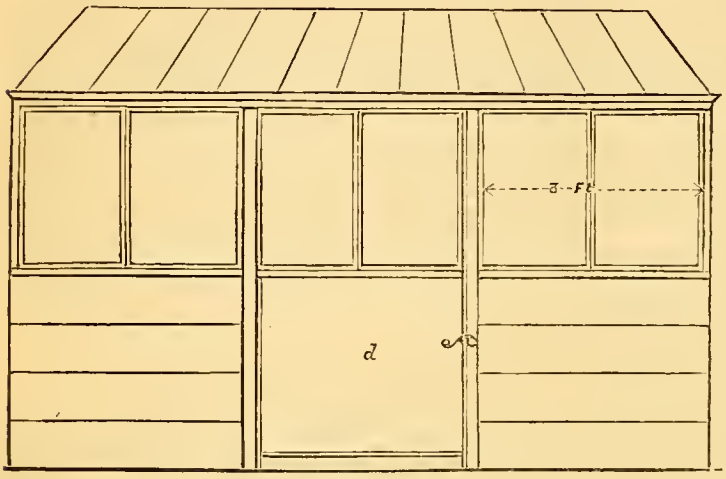
Situation.—Having already given the character of soil best suited to each tree, it is only necessary here to describe the site, and this I am aware that local circumstances often determine. One thing, however, I would say, that when the soil and other things seem favourable, a site sloping to the north is not to be despised for Apples and Pears, for, although one facing the west has the advantage of being a little later in receiving the unwelcome visit of a bright sun after a frosty morning, it is not so exposed to the destructive effects of the south-westerly winds we generally have once or more during the fruit season. In 1869 and 1870, I believe it was about the 10th of September each year, and some orchards were almost stripped on the last occasion. A west aspect, however, may be favourable for Plums, for they are mostly gathered before the storms that precede the equinox take effect. Slopes facing the east are not so good, those to the south are frequently in Filberts or Cobs; but all have some advantages which it is difficult to describe without knowing the peculiarities of the individual place.

Planting New Orchards.—Where it is contemplated planting a new orchard to produce fruit for market, only the very best soils and situation suitable for such purposes ought to be operated upon. The great competition in the trade, which we may say is yearly increasing both at home and abroad, leaves small chance of our again obtaining those high prices for fruit which were common some thirty or forty years ago, so that the intended planter should well consider what chances he has of obtaining a quantity of good fruit, for it must be quantity that will remunerate him. A fancy price for a small quantity of a very choice kind, however tempting the sound may be, is not the thing to look to; the buyers of such things are few; besides, if they were increased, it is not unlikely that the foreign growers would step in and successfully compete with the fancy grower, as they now do with the general one, so that it is only advisable to look to the million as customers; and if many of the indifferent orchards now in existence were done away with, and replaced with others on more favourable sites, discarding at the same time some of the old varieties of fruit, it is likely that this kind of husbandry might again become a remunerative one. At the same time let it be borne in mind that I only advise fruit plantations to be made on such soils and situations as are described, because they are the most likely to pay, and not because those of a contrary description cannot be made productive. On the contrary, a lavish expenditure of money can make a desert fruitful, but the calculating fruit-grower, who reasonably expects a guinea returned for every pound expended, will naturally pause before he commits himself to any of those plausible schemes that have for their starting point a considerable expenditure of money, and the

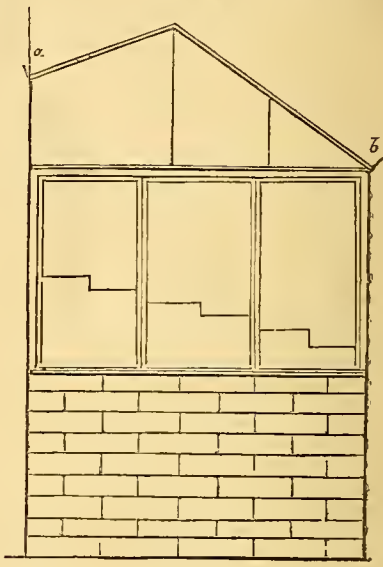
uncertainty of receiving more than a certain per-centage of it back again, such for instance, as the plan of dwarfing Apple and other fruit trees into diminutive objects, so as to have so many thousands of them upon an acre. The careful planter will first consider what a thousand trees will cost, and a little reflection will enable him to foresee that everything will be dwarf as well as the trees—the purse of the planter, in the first instance, alone excepted.

AN AURICULA STAGE.

The accompanying figures represent a stage capable of containing from 100 to 120 blooming plants. It is built against a wall and facing north; the ends are of brick, and the front of wood, but this can be of brick as well. There is a gutter at the back, as well as one at the bottom, but the back one is used because of the height of the wall; were the wall lower it would



Front Elevation.



End View.

a, Gutter at back wall. *b*, Gutter in front. *d*, Door.
Height to apex of roof, 7 feet 8 inches.
Height in front, 6 feet.
Height of front boarding and end brickwork, 3 feet.
Height of front sashes, 3 feet.
Length, 10 feet. Width, 4 feet 8 inches.

not be necessary. The shelves are formed of two battens, moveable, and leaving a space between them; there are six shelves. It will be seen that the panes of glass are large, advisedly so, as they look so much better. The sashes in front move up and down like windows.—D., *Deal*.

THE GRAND YORKSHIRE GALA.

Some of the north-country floral exhibitions are now quite as important as the London ones; in fact, we doubt whether any of the London shows now equal in quality and variety the Manchester Show. Next in importance is Leeds, and after Leeds is that which was held in York last week on the Wednesday, Thursday, and Friday. The weather was inauspicious, for the rain, which was gladdening the hearts of agriculturists and insuring, we hope, an abundant harvest, was damping to the ardour of sightseers, and we believe there never hardly were fewer gathered together on the second day of the Show, which is usually the people's day, than this year. The arrangements of the tents are very effective, and might well be adopted by other societies, a large circular tent 300 feet in circumference occupying the post of honour, and having the large specimen stove and greenhouse plants staged in the centre. There were five large long marquees radiating off from it like the spokes of a wheel. The largest was devoted to Pelargoniums (Show, Fancy, and Zonal), Fuchsias, and bedding plants; a smaller one to Roses, both cut Roses and pot; a third to ornamental-foliaged plants; a fourth to fruit and Orchids; and a fifth to the smaller specimens of stove and greenhouse plants.

The specimen plants exhibited by Mr. J. J. Stevenson, Mrs. Cole and Son, and Mr. W. E. Dixon were very fine, noticeably a plant of Cattleya Mossiæ of Mr. Dixon, of which we think we have rarely seen a better-bloomed specimen. Pot Roses were exhibited well by Mr. G. Edwards and Mr. Douglas; Mr. Edwards having the largest bloom, while Mr. Douglas had the freshest foliage.

The only exhibitors of cut Roses were Messrs. Paul & Son, of Cheshunt; Mr. Cranston, of Hereford; and Mr. Edwards, of York; and in each case the awards were in the order named, Messrs. Paul carrying off all the first honours. In their forty-eight they practically solved a question which was asked in The Journal of Horticulture a short time since, by exhibiting Devoniensis and Climbing Devoniensis in the same stand. We should be sorry to disqualify under such circumstances, but we much doubt if they ought to be shown as distinct Roses. Messrs. Paul & Son, for instance, are now sending out a Climbing Victor Verdier, a sport originating from a strong shoot of Victor Verdier; are they eventually to be shown as distinct Roses? This is a question which is yet doubtful. Amongst Messrs. Paul & Son's forty-eight were very good examples of Marquise de Mortemart, Abbé Girandier, Camille Bernardin, Souvenir d'un Ami, and nearly the best Général Jacqueminot we have ever seen, and we were glad to see the old veteran in the field at the head of his forces. They also had one of the best blooms of Modèle de Perfection we have ever noticed in a stand. In their thirty-six, Duke of Edinburgh and Marquise de Mortemart, and in that of twenty-four, three trusses of each kind, Souvenir d'un Ami, Xavier Olibo, Vicomtesse de Vesins, and M. Eugène Verdier were especially noticeable; the latter we think a great acquisition.

Among Mr. Cranston's Roses the best were Mdlle. Marie Rady, an exceedingly fine bloom; Annie Wood; Baroness Rothschild, a little overblown, but beautiful in the delicacy of its colouring; Homère, and Alfred Colomb. He also exhibited the best blooms of Felix Genero we have yet seen, and though its shape will preclude it from ever being among the first-class, yet owing to its being a variety in point of colour it will be useful in a stand. Mr. Edwards showed some good samples of Général Jacqueminot, Maurice Bernardin, and J. Nesmith, a variety which we are little acquainted with, and, considering that all his Roses were gathered from under glass, from a house only recently erected, and from Roses not yet established, the blooms which he exhibited did him great credit.

One of the most noticeable features in the Exhibition was the Pelargonium tent. Here Mr. Edwards carried off the chief honours, being first for Show Pelargoniums, Fancy Pelargoniums, Fuchsias, and bedding plants. There was no very new feature among the bedding plants, with the exception of Senecio argentea, a new silvery-foliaged plant, introduced by Messrs. Buckhouse. The Ageratums Tom Thumb and Imperial Dwarf also were well exhibited. Among Bronze Geraniums Crown Prince and Ebor held a conspicuous position, and we hardly remember to have seen so great a difference in colouring as between two plants of Ebor, which were staged alongside each other; one of them, a large plant, was quite green, almost the colour of Lady Constance Grosvenor, while the other was rich bronze and gold. The Tricolors were good. Flambeau (so like Sophia Dumaresque that it is barely to be distinguished, if at all), was well shown in several collections, and Lady Cullum was certainly the best. In Noseguys and Zonals, Indian Yellow, Le Grand, and Amy Hogg were the best;

Clipper and Lord Derby also being well shown. Mr. Edwards's Fuchsias were good.

Among the Orchids, the question struck us whether Cypripedium barbatum superbum and Cypripedium barbatum giganteum were sufficiently distinct to be shown as two separate varieties in a class of six Orchids. We should like to know the opinion of Orchid-growers on that point.

In conclusion, we may congratulate the management on the general excellence of the Show, and, which is always a matter of congratulation, on the fairness of the awards.

FREMONTIA CALIFORNICA.

The following notes on this great acquisition to our shrubbery borders appeared in the "Botanical Magazine" for 1866 from the pen of Dr. Hooker:—"A very singular and beautiful hardy Californian shrub, imported by Messrs. Veitch and which flowered at their nurseries in June of the present year. It is, undoubtedly, the choicest early-flowering shrub introduced of late years, and more than rivals the Forsythias in many respects. It was discovered during Colonel Fremont's adventurous United States Expedition to the Rocky Mountains in 1846, and bears the name of that gallant officer and highly-distinguished explorer.

"The botanical characters of Fremontia are very anomalous. It was referred to a new section of Bombaceæ (Fremontieæ) by its founder, and correctly placed along with the famous Hand-plant, Cheirostemon (Tab. nostr. 5135), and the stamens were described as five, with two-celled anthers. On the other hand, certain considerations of affinity and structure induced Mr. Bentham and myself, following Dr. Torrey, to regard the apparently two-celled anthers of this plant and Cheirostemon as consisting of two confluent single-celled anthers, whence we referred both to the order Malvaceæ instead of Sterculiaceæ. I must confess, however, that after examining living specimens of Fremontia, I am inclined to refer the Fremonticæ back to Sterculiaceæ, placing it next to the tribe Sterculieæ. It is a woody shrub, attaining 10 feet in its native country, and resembling a Fig tree."

Fremontia californica.

The first living plant of the Fremontia in Europe, and for a long time the only one, was raised at Chiswick in 1851, from the only seed that vegetated out of a packet received from Mr. Robert Wrench, of Jacob Wrench & Sons, 39, King William Street, London Bridge. All efforts to propagate it proved vain, and when the Horticultural Society fell into difficulties, the plant was sold in April, 1859, to Messrs. E. G. Henderson and Son for £37 16*s.*, and we believe subsequently died.

The re-introduction of the plant is due to the enterprise of the Messrs. Veitch, who obtained seeds through one of the Lobbs, from the northern part of the Sierra Nevada, where, as well as in Mariposa, the plant is found growing wild. These seeds have furnished the plants from which Messrs. Veitch have exhibited flowering branches in the May and June of the present year, as well as some years ago.

The plant is a shrub, growing from 4 to 10 feet high, and bears an abundance of rich yellow flowers fully 2 inches in diameter.

NEW BOOK.

The Subtropical Garden, or Beauty of Form in the Flower Garden. By W. Robinson, F.L.S. London: John Murray.

To those who are interested in what is called "subtropical gardening," this new work of Mr. Robinson's will come with a welcome. It may be necessary for us to state, for the information of those who do not know what is meant by sub-

tropical gardening, that it is a sort of garden decoration produced by the introduction of masses or of isolated specimens of plants having a luxuriant growth and large picturesque foliage, and which are generally indigenous to tropical or subtropical climates, giving to the places where they are planted somewhat of the effect of a tropical vegetation. When the system was first introduced, the term may have been applicable enough, but as it is now practised it is arbitrary and unmeaning, for many of the plants employed are neither tropical nor subtropical. The system, nevertheless, by whatever name it may be called, is one which has introduced new features to our flower gardens and pleasure grounds, which are at once bold and pleasing in their effects, and wherever there is space sufficient to practise this style of decoration, it is desirable to some extent to introduce it.

In the work before us Mr. Robinson has very ably treated the subject as a distinct branch of decorative gardening. In his introduction he enters fully into the practical part of the subject of forming these gardens. But the greater part of the book is occupied with descriptions and excellent wood engravings of all the plants used in subtropical gardening, and many lists of plants adapted for various purposes of subtropical gardening. Of the descriptions we take as an illustration the familiar Canna:—

"If there were no plants of handsome habit and graceful leaf available for the improvement of our flower gardens but these, we need not despair, for they possess almost every quality the most fastidious could desire, and present a useful and charming variety. The larger kinds make grand masses, while all may be associated intimately with flowering plants—an advantage that does not belong to some free-growing things like the Castor-oil plant. The Canna ascends as boldly, and spreads forth as fine a mass of leaves as these, but may be closely grouped with much smaller subjects. The general tendency of most of our flower-garden plants is to assume a flatness and dead level, so to speak; and it is the special quality possessed by the Cannas for counteracting this that makes them so valuable. Even the grandest of the other subjects preserve this tameness of upper-surface outline when grown in great quantities: not so these, the leaves of which, even when grown in dense groups, always carry the eye up pleasantly from the humbler plants, and are grand aids in effecting that harmony which is so much wanted between the important tree and shrub embellishments of our gardens and their surroundings, and the dwarf flower-bed vegetation. Another good quality of these most useful subjects is their power of withstanding the cold and storms of autumn. They do so better than many of our hardy shrubs and plants, so that when the last leaves have been blown from the Lime, and the Dahlia and Heliotrope have been hurt by frost, you may see them waving as gracefully and as green as the vegetation of a temperate stove. Many of the subtropical plants, used for the beauty of their leaves, are so tender that they go off in autumn, or require all sorts of awkward protection at that season; but the Cannas last in good trim till the borders must be cleared. All sheltered situations, places near warm walls, and nice snugly-warmed dells, are suitable positions for them. They are generally used in huge and ugly masses, both about Paris and London; but their true beauty will never be seen till we learn to place them tastefully here and there among the flowering plants—just as we place sprigs of graceful Fern in a bouquet. A bed or two solely devoted to them will occasionally prove very effective; but enormous meaningless masses of them, containing perhaps several hundred plants of one variety, are things to avoid and not to imitate. As to culture and propagation, nothing can be more simple: they may be stored in winter, as readily as Potatoes, under shelves in the houses, in the root-room, or, in fact, anywhere, if covered up to protect them from frost. And then in spring, when we desire to propagate them, nothing is easier than pulling the roots in pieces, and potting them separately. Afterwards it is usual to bring them on in heat, and finally harden them off previous to planting out in the middle of May; but a modification of this practice is desirable, as some kinds are of a remarkably hardy constitution, and make a beautiful growth if put out without so much as a leaf on them. The soil for all Cannas should be deep, rich, and light.

"In rambling through the suburbs of Paris, I once came upon a tuft of Canna springing up strongly through a Box-edging—pretty good evidence that it had remained there for some years. Upon inquiring of the proprietor of the garden I found this was the case, and that he had no doubt of the hardiness of several other kinds. They were planted not more than 8 or 10 inches deep. When we remember that the Cannas are amongst the most valuable plants we use for giving grace and verdure to the flower garden, this surely is a hint worthy of being acted upon, as, of course, they will prove equally hardy with us. Considering their diversity of colour and size, their graceful pointed habit and facility of propagation, we must concede them the first place; but their capability of being used by anybody who grows ordinary bedding plants, and the fact that they may be preserved so very easily through the winter, enhance their value still more. Cannas, protected by a coating of litter, have been left out in Battersea Park through severe winters, and during the unfavourable summer of 1867 attained a height of nearly 12 feet. Where it is desired to change the arrangements as much as possible every year, it may not be any advantage to leave them in the ground, and in that case they may be taken up with the bedding plants, and stored as simply and easily as Carrots. Wherever they are grown as isolated tufts, in small groups, or in small beds, it will be best not to take them up oftener than every second or third year. These noble plants would also adorn the conservatory, which is often as devoid of any dignified vegetation as the unhappy flower gardens which are seen all over the country. Few subjects would be more effective, none more easily obtained."

NOTES AND GLEANINGS.

We regret very much to announce the premature death of one of our correspondents, Mr. W. T. Cripps, nurseryman, Tunbridge Wells. He was a few months more than thirty.

WORK FOR THE WEEK.

KITCHEN GARDEN.

Now is a good time to apply salt to *Asparagus* and *Sea-kale* beds; about 1 lb. to a square yard is sufficient; it is a great waste to lay it on after the plants have ceased growing, particularly when the soil is at all cold and stiff. Stimulants applied now will enable the roots to lay up a good store of organisable matter for another season, and, therefore, in addition to salt, occasional applications of liquid manure should, if possible, be made. The effect of this kind of treatment will be perceived in the autumn, by the plants retaining their green colour much longer than the others not so treated, and in spring by increased size and productiveness, evidently showing that the longer the functions of the plants can be preserved by the application of stimulants, the greater the amount of matter stored-up for the ensuing season. The planting-out of Cape and other *Broccoli*, *Cabbages*, *Cauliflowers*, *Kales*, and *Winter Greens* must be vigorously prosecuted, and every vacant space should now be kept well filled-up. The trenches for the main crops of *Celery* should now be prepared; for this purpose the spaces between the rows of *Peas* are very applicable. The shade from the Peas will be very useful to the Celery in its earliest stages, and the Peas will be entirely removed by the time they are likely to be injurious. Continue to top *Beans* and Peas as they advance, and keep them well gathered as they become fit for table. Make another sowing of Peas. The Early Frame is the best sort for this and the next sowing, after which there is little chance of their coming to perfection. Another sowing of *Dwarf Kidney Beans* may be made for succession, and advancing crops both of these and *Scarlet Runners* should be well thinned-out. Keep the soil about them well forked-up and pulverised. Continued experience goes far to prove that the fork is much the best instrument that can be used amongst all wide-planted crops. Continue to make occasional sowings of *Lettuces*, the White Silesian for stewing, and the Gold Cos, Bath Cos, and Green Cos for salads. Keep *Turnips* well thinned-out, and watered when needful; make successional sowings. See that *Tomatoes* are kept well thinned-out and nailed to the wall.

FRUIT GARDEN.

Strawberries will now require timely applications of water according to the state of the weather, and the fruit must be protected from birds. A trustworthy boy is far cheaper and better than popping at them from morning till night. The nailing-in of the young wood of wall trees must be continually followed up. The breastwood of Pears should now be broken off within a few joints of the base, carefully retaining the leaves. The opinions of practical men are divided on this point, but after many trials I retain the system of removal as being the neatest and most effectual. Of course, a due supply of young shoots must be laid-in to fill-up all present or prospective vacancies. Now is the best time to thin-out the young canes of Raspberries. Pinch-out the tops of young shoots of Figs, and thin the fruit if too thick. As soon as the Grapes on the open walls are set they should be well thinned, the trouble of doing this is amply repaid.

FLOWER GARDEN.

Preparations should now be made for propagating border varieties of Pinks. Many methods have been recommended for increasing the Pink, all more or less successful in their results; but those who chiefly grow them for the purpose of decorating flower-garden borders will find, now that so much time is taken-up with other matters, that the plan propounded some years ago by Mr. Mearns is more speedily performed, and is attended with as great success as the wearisome and

tedious mode of propagating by pipings. Choose a shady and moist situation, add some sand when digging the ground, and make it smooth and fine. This is all that is necessary in preparing the ground for the reception of the slips; take off slips from the old plants by pulling them downwards; do not dress them in any way, neither smooth the rough end nor shorten the grass; lay the slip horizontally on the surface of the ground, press it into the soil in a doubled form with one hand, and set the grass-side upwards with the other, let it be well watered, and the operation is completed. No shading is required. See that a good number of Pansy cuttings are put in. Hyacinths, Tulips, &c., should now be taken up, and after they are dried stored away in some dry room. Let the beds be prepared as soon as possible for planting. Those bulbs which are placed in the borders, and which add so much to the beauty and lively appearance of the flower garden and shrubbery during the spring months, should now have some attention; those which require it should now be taken up. I would recommend that this be done annually, but only when necessity requires. An acquaintance with the different species will direct the cultivator in his operations in this respect. Some species, for instance, form new bulbs beside the old ones, and in course of time become so crowded as to become weak and cease to flower; others form the new bulbs under the old ones, and at last get so deep as to produce the same effect; others, again, form their new bulbs over the old ones, and send them above the surface of the ground, where they are destroyed by the hoe, the rake, or frost. All those which require taking up should be lifted now and housed till autumn. The evergreens in general will now have done shedding their leaves for a while, and a more general cleaning than usual should take place in dressed grounds.

GREENHOUSE AND CONSERVATORY.

Many of the plants here being at this period of a somewhat ephemeral character, means must be constantly resorted to in order to insure a continual succession of gaiety until the frost sets in, when the gap will be filled up with Chrysanthemums, the Camellia, Chinese Primroses, and several other midwinter flowers. The latter constitute a division by themselves, of course, and lead the way to the forced flowers of returning spring. Those who keep a sharp eye on such matters will always take care to have a surplus stock in hand after the massing is completed. Such stock should be most ample—not less, but more than is wanted, in order to provide against gaps in the flower garden, and to supply the various in-door demands. All spring-propagated stock remaining in the store pots should be potted off forthwith, and placed on or plunged in ashes in a spot sheltered from the wind. Balsams, Cockscombs, and other tender annuals for succession should receive their last shift before they become pot-bound, and plenty of the Achimenes family should be potted-off, some in large masses. Some of the best Scarlet Geraniums should be selected for flowering next winter. They should be rapidly grown and frequently stopped. Towards August they will become pot-bound; they must not, however, be shifted, but merely hardened in a very exposed situation until the end of September, in order to have them sturdy and very short-jointed. A light and warm shelf near the glass will thus make them objects of great interest all the ensuing winter. Let the Fuchsias have ample supplies of water, and provide succession stock in case of exhaustion. The early-flowering Pelargoniums, now rather exhausted, should have the bulk of their tops removed and made into cuttings. The old stools may then be thrown on their sides in a shady situation until they break buds half an inch in length, when they must be disrooted and repotted in rather smaller pots. Exhausted Cinerarias may be put in an old frame or pit and fumigated. They may then be cut down and turned out into a raised bed in the garden. They will there feed and produce an abundance of suckers with a little attention in regard to watering, &c.

STOVE.

Frequent syringings, accompanied by moist floors and other surfaces, will be needful with the ordinary stove stock. With regard to Orchids, some little moderation is necessary, especially when the weather takes a sudden change. Some of the Orchids will now require a little assistance in the way of topping-up, and a watchful eye must be kept as to insects. Barkeria spectabilis, the Lycastes, and Odontoglossum grande seem to enjoy the temperature of a cool greenhouse without fire.

PITS AND FRAMES.

Before all the plants are turned out select some of the best for store plants, especially Heliotropes, Salvias, Petunias, shrubby Calceolarias, &c. Give them a good shift, and place them in a sheltered situation.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

AT last delightful warm rains with a genial south wind. The change produced in a few days is almost magical—the meadows, the corn crops, and the Turnips are all looking so happy and thankful. Some of our crops in the kitchen garden, to which in expectation of rain we had given a fair soaking of sewage, seem now to be rather luxuriant. In addition to what we stated a few weeks ago about sewage, let us impress on our younger readers that perhaps of all times the best to apply it is just before rain is expected. All manure-waterings in the open air are then more beneficial, and there is less risk of giving an overdose.

Watering and Water-Collecting.—It is not long ago that we knew a clever young gardener who actually chose a dull foggy day to water a number of plants, and was found fault with accordingly, and nothing would be listened to in the way of reason or explanation. "Oh, Mr. F. knows what he is about, and he was watering on a bright sunny day—that is the time to give the plants the benefit of a watering." We have watered in bright sun as well as "F.," because we could not help it, and we generally accompanied such watering with some means for keeping the water in the ground, and preventing the sun evaporating it into the air. After the ground and the air are warm the best of all times for watering is the evening, because the plants have then the best opportunity of absorbing and using up the liquid applied; and the proprietor of a small garden may water then. But in many large places, and more especially where the bulk of the water must be brought by horse power, the gardener is often glad to use the water when he can obtain it. This does not at all alter the principle involved in watering in bright or in dull drizzly weather; and we have no hesitation in stating, as the result of much experience, that the gardener who was found fault with ought to have been complimented, and at least his reasons for doing such a thing at such a time ought to have been listened to. When men who think as well as work are thus treated, need we wonder that there are so many who attend to their duties merely as a work of routine, and trouble themselves nothing about the reason why? We wish, however, that the employers of gardeners could be induced to see the difference between an intelligent agent who will vary his operations according to varying circumstances, and thus make the most of these circumstances, and the merely good working machine who can only work well in a definite way.

Writing now on the evening of the 17th, while the thunder is pealing and the warm rains descending so nicely, the question aptly occurs, "Would you have watered at all if you had known that such rains were coming?" Well, in general terms and for general things perhaps not; but then how were we to know that we were to have heavy rains for several continuous days instead of one? The ground was so dry, that until this afternoon all the warm rains only went down to a very small depth from the surface. They refreshed the foliage and produced vapour about the plants, but they did but little to reach the roots. Even now all we have had as yet has not gone down very deeply, and therefore in the cases formerly indicated, as Peas, Cauliflowers, and Cabbages, we have no doubt that the watering with sewage has well repaid all the labour. The effects have been most striking. Peas have filled and swelled most rapidly; and Cauliflowers, that with few exceptions refused to budge, have swelled their beautiful snow-white heads, and made us forget all about the cold parching winds, in which so few things would progress as we wished.

We have now plenty of water in our tanks and reservoirs, and we only regret that so much that fell on roads and walks has run to waste. We know that many make remarks on our fears about water. Those who have a pretty large place to keep as neat as possible, and with whom water is almost as costly as the cheap wines, will have a feeling of sympathy. Certainly with our experience, and were our young days coming back, we would not take charge of a garden without knowing something of the water supply.

We are doing much to save the water that falls, but there are a few simple facts which we wish to notice for the benefit of all concerned, and as bearing on what was lately stated in reference to tanks and connecting pipes, and purity and clearness of water.

We have two lean-to orchard-houses in a line, and a tank made at the end of one to receive the water that falls on the roof of both. From the one house the water has to pass only a short distance to the tank; from the other it has to cross from front to back outside the wall, and then flow 80 feet under ground before it reaches the tank. From the house nearest the tank the water poured in from the spout right merrily this evening. Had it done so from the other house the tank would have had nearly a double supply. After nearly two hours of drenching rain scarcely a drop came from the farther house, though the water ran and disappeared from the spout as freely in the one case as in the other. Then where could the water go? Well, it is no mystery to us. Contrary to our expressed wish to have either metal pipes, or hard-burned earthenware pipes with cement joints under ground, for a paltry saving common soft-burned earthenware pipes were used; and as we were forced to be away at the time, we have always thought that more mortar was used for the joints than cement; at any rate, contrary to our expressed wish, all was covered up before we returned. The least defect in the joints, and the porosity of the pipes, would be quite sufficient to account for the non-appearance of the water in the tank. For some trifling supposed saving—in reality a penny-wise-and-pound-foolish affair, the tank, as respects this house, was made in vain. Instead of hogsheads we had not quarts. We shall endeavour to have all overhauled before long. Such a fact ought to be a warning.

Another instance has just come under our notice. A pretty little chapel has just been cleaned and renovated. Of all places, churches and chapels ought to be patterns at least of neatness and cleanliness. The position of the place in question is very good, the ends standing north and south, the ground sloping gently to the south in front, and all open sward common. At the north end there is barely a yard of ground, abutting against a high hedge bank. With strange perversity, contrary to what the slightest consideration would dictate, the spouting at the sides of the roof is taken to this confined sunk north end, and to a common brick drain there. It was advised to bring the water to the south front at once, but the trustees satisfied themselves, by pouring buckets of water down, that the water did come from the drain, and so things remain as they are. The water would run from our orchard house if we poured bucketfuls down, that we have proved; but with less than a flood the water is absorbed by and oozes out of the drain; and in the case of the chapel, clean and paint how they may, the north end inside soon becomes an ugly spectacle from damp incrustations, and nothing will prevent them until the drain or spouting be altered, and thus dryness at the foundation of the building be secured.

Now, as regards roofs in relation to water supply. There is nothing more picturesque than an old thatched roof; no roof is so warm in winter and so cool in summer. When it becomes moss-and-lichen-incrusted it passes the water off pretty freely, but just in proportion to the age and picturesqueness of the roof the water will be more tainted and unfit for particular purposes. Tile roofs are very good, but, unless hard-burned and vitrified, tiles should not be adopted where tanks fed from roofs are to be depended on instead of wells. Like soft drain tiles, they absorb a great deal of gentle rains, and until absorption ceases little will reach the spouts. There is no better roof for collecting water than good hard slate, unless we come to glass.

A few words as to tanks and filters. Where very little smoke falls on slate roofs, for common purposes there is no necessity for filters. In some cases we have known horses and cattle turn away from filtered when they could obtain unfiltered water. For general domestic, laundry, or even garden-syringing purposes, it is well to pass the water collected in tanks through two small filters previously. The additional expense of two small brick-and-cement filters, say 30 inches square by as much in depth, is a mere trifle when thus water pure as crystal is secured. This is the more necessary when the water comes from roofs near to kitchen and other chimneys. For a new tank, where clearness of water is an object, we have two of these filters, and as they are not yet covered, anyone who looked at them after these rains would at once see that the extra money was well spent. In the receiving filter the surface of the water looked like so much ink. In the second filter, from which the water passed to the tank, the water was as clear as a dewdrop. Such small filters are easily cleaned out, and the materials washed and replaced as necessary. We have drawn water for a great many years from a tank that has no filters, and the water is delightfully clear; but little smoke rested on the slate roofs, and we suspect that by this time there will be a deposit at the bottom of the tank. Where such deposits exist to any considerable extent there may be some danger in the free use of the water for domestic purposes, and none the less because it is bright and sparkling.

FRUIT GARDEN.

The rains did more benefit to fruit of all kinds than any syringings we could have given to trees and shrubs, and will greatly help to cause our Strawberries to swell fast. Merely as an example of the dryness, we may mention that we had to net green Cherries, as they and green hard Strawberries were being freely carried off by the blackbirds and thrushes. Even some Currant bushes were almost stripped of their green fruit, as the birds popped over the wall with whole strings of green Currants in their beaks. Since the warm rains we have seen little of them. Worms and molluscs would be more easily obtainable. We proceeded with nipping the points out of the shoots of dwarf Currants, &c. In the case of Plums and Cherries many of the points have some fly on them, so that we get rid of the fly by the same process. Where able to reach them we shall follow with a good syringing with clear soot and lime water. This is one of the best washes when used in time. Clear soap water is also very good, but if taken in time there is great cleansing power in nice clear soft water forcibly applied. The above two washes will improve rather than injure growth. We have nothing to say against the compositions and washes advertised in these columns, only we say, Be careful to use them weak enough.

ORNAMENTAL DEPARTMENT.

Our walks are tidy; we shall presently have them neat for the season by giving them all a slight surface-sprinkling, and thus avoid all hoeing, turning, &c. Without this the sides, from much sweeping, are apt to become soily. When all the grass cannot be cut early and kept as short grass, it is always advisable to keep a breadth short by the sides of the walk, otherwise, if that is allowed to grow long, the walk will soon become green from the shed seeds of the grass. We have several times detailed how we sprinkle the walks with salt in dry weather, and then throw a little sand over the salt. This prevents damp stickiness in the walks, an evil ever apt to occur in fine-surfaced walks when salted. On this account we never like to use salt for walks after June, so that the softening and damping influence of the salt should be all gone before the winter comes. A little salt along the sides close to the turf verges is the best of all preventives to earth heaps being raised there by worms, and nothing except weeds disfigures a walk more than these earth heaps.

The lawn, which was returfed to remove all inequalities, looks as if it had not been touched, only it threatens to give us extra labour by its vigorous growth. Since the warm rains it would want going over every second day to keep it neat. Where economy in labour is an object our advice would be, Lessen rather than increase the size of short lawn grass. There is nothing more expensive about a garden than a well-kept lawn. It is ever doing, and after all never more than done. In many places the gardener may increase as much as he likes the space for short grass, whilst an additional rod to the cropping garden must not be even hinted. If he has a definite amount of labour, he will, if wise, think twice before, by adding to the short grass, he create constant labour and difficulty.

All bedding plants out of doors we should now consider out of danger. In a few days we shall turn out the Coleus plants which have been standing fully exposed. Calceolarias are a mass of bloom. For reasons stated as to choosing cuttings, the Scarlet Geraniums are thin of bloom as yet, but we have little doubt they will be all right shortly. We find Iresine Lindeni is hardier than I. Herbstii, and both are hardier than the Coleus. We were surprised to see that Centaurea candidissima stood the winter in the north of Scotland. Not a plant stood with us, and even most plants of the Cineraria maritima were killed, though both were little protected by mounds of dry ashes.

All trouble with watering will be saved for a time. Roses pretty clean before are now thoroughly washed. Those against a wall have been magnificent, as our four-footed intruders did not go to them there.

Where cut flowers are a specialty, allow us to recommend for their neatness Salpiglossis and Phlox Drummondi. In a packet of seed of each there is wonderful variety. For a trifle more money twelve separate varieties of each can be had in a packet. Many of the varieties of the Phlox are most charming, and the cut blooms stand long. Many that come distinct and

true to colour from seed are so fine that a few years ago every available piece would have been made into cuttings, and stored over the winter. This may be done, but our experience is, there is much less trouble with seedlings, and they certainly grow more vigorously. A person of refined taste told us last year that the Salpiglossis were fine, but the Phloxes were the essence of loveliness.

As respects florists' flowers, not a dead leaf should disfigure an Auricula; care should be taken that the drainage is acting properly, and not a small worm should find a home in the pot. If potted in clean dry pots there is no difficulty in turning the ball out clean; and if there is a sign of a worm, a small wire passed through the ball will soon bring it within reach of the fingers. The drainage can then be seen to, and the ball replaced. A little rich surfacing should be added, and the plants kept on boards or on rough cinders on the north side of a fence. For all such purposes we prefer rough cinders flattened a little with the back of a spade to finely-sifted ashes, as the latter are so apt to choke the drainage. Tulips and other bulbs now over, and with the foliage ripe, may be taken out of the ground, and dried previous to bagging or boxing them.

The few bedding plants that will be left we may pot and keep on for autumn flowering. We expect that the flower-beds will hardly have a blank this year. Where annuals are depended on for early and continuous supply, a quantity should be sown in 6 inch pots, and these will replace the earlier crops. Then, again, for cutting, let us especially recommend the Nemophilas, especially insignis and maculata; they are very beautiful, and stand well.

Plants taken out of greenhouses should have a shady place at first, and have the pots protected from bright sun afterwards. We potted Pelargoniums of the florists' kinds for late blooming, and scarlets will be treated in the same way. We also potted a large batch of Balsams, having kept them in 4 and 5-inch pots until they showed bloom. Hardly one has proved single. We prefer this mode to potting in large otsp before we know what the flowers will be. By cutting off all the forward buds, the flowers on the main stem and branchlets will expand about the same time. We have tried stopping all these, but now we are disposed to let the stem and branchlets take their natural course. Fine specimens can thus be obtained if the plants are grown in rich soil and have plenty of room and air. For want of room we are forced to defer giving large pots to some of the finer kinds of Coleus and other plants which need encouragement. Much potting now requires to be, and must be, attended to as soon as we get relief from flower beds and pleasure grounds.—R. F.

TO CORRESPONDENTS.

*** We request that no one will write privately to any of the correspondents of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By doing so they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely to The Editors of the Journal of Horticulture, &c.*, 171, *Fleet Street, London, E.C.*

Books (*T. M.*).—The "Cottage Gardeners' Dictionary." You can have it free by post from our office if you enclose 7*s.* 2*d.* with your address. (*W. Nittleton*).—There is no manual you name. "How to Farm Two Acres Profitably" might suit you.

Herbal (*Cheshire*).—If you merely wish to know the medical qualities of plants, Gray's "Supplement to the Pharmacopœia" will suit you. State what information you need.

Covent Garden Market Prices (*Elruge*).—Our quotations are the retail prices.

"What is an 'Amateur who does not employ a regular gardener?' We have a show where certain classes are so restricted. I manage all myself, with a lad aged nineteen to do the work. He has never been in any garden but mine, and I took him off a farm where he was carter and cowboy. Am I qualified to show under the above restriction?—Quercus." —[Certainly you are an amateur, and the lad is not "a regular gardener."]

Orange Fungus on Austrian Briar Rose (*A. C. T.*).—Yours is one of the worst cases of orange fungus we have ever seen; there are myriads of spores on the shoot sent. It is almost too late, we fear, for any remedy, but we should brush each shoot with a strong solution of soft soap—as much as a gallon of hot water will dissolve, and dust while wet with powdered sulphur (flour of brimstone), leaving it on for two or three days, and then syringe it off, and renew the application as long as any remains on. This application will, we have no doubt, kill the fungus, and it will remain to be proved if the plant has vigour enough to recover from the fungus afterwards.

Nitrate of Soda as a Manure (*H. H.*).—We believe that to all garden crops it might be advantageously applied, provided it were given in small quantities. It may be used more largely on lawns. Experiments have proved that it is very beneficial to Carrots, and it is very destructive of vermin in the soil. The most effective mode of applying it we think is mixed with ground bones—one part nitrate of soda and two parts ground bones.

Planting Gourds and Hardy Cucumbers (*Far West*).—They ought to be planted out without further delay. They will most likely bear fruit before the season is over. They can do no good where they are; it is too hot for any kind of plant. Plant out at once, protecting for a few days from sun and cold at night. A basket or hamper inverted over the plants is as good as anything. Remove it in a few days. Our correspondent wishes to know where he would be likely to procure seed or plants of Nepeta Mussinii and Reseda Phyteuma.

Budding Apple Trees (*Wire*).—It is best done early in July, and in the same manner as for Rose trees, only the buds of the Apple are generally put on the main stem of the stock, and from 3 to 6 inches from the ground. Your former communication must have miscarried, as we reply to all queries submitted to us.

Climber for East Wall of Conservatory (*J. P.*).—As your house receives no sun, we know of nothing that would suit you so well as Ivy and Hedera algeriensis variegata is very fine, also H. rhomboidea variegata with less bold foliage. Jasminum nudiflorum would also grow freely, and perhaps flower, as we have had it in beautiful bloom in January on a north wall.

Kohl Rabi Culture (*R. P.*).—The seed should be sown in the first week of May in a bed, and in the same way as any other kind of Cabbage. At the end of June the plants should be planted out in good rich soil in an open situation, planting in rows about 18 inches apart, allowing 1 foot between the plants in the rows. They produce a sort of Turnip above ground, which is boiled and eaten, and is by some esteemed. The best kinds for gardens are the Early Green and Early Purple Vienna. Kohl Rabi is also grown for cattle, and considered a good substitute for Swede Turnips. The seed is sown in May, and the plants transplanted on manured drills at the close of June. The Large Green and Large Purple are best for this purpose. For table they should be used when the heads are 3 inches in diameter.

Pelargoniums Failing (*B. H. Y.*).—We do not see anything in the construction of your house or your mode of treatment that should cause the plants to flower so indifferently. We think, however, as they go on well up to April, that the failure is due to the glass, which would affect the foliage as well as the flowers. We advise you to afford a shading of tiffany after March, having it made to roll up and let down at will, and employing it in all bright weather from about 8 A.M. to 5 P.M., but in cloudy weather keep it rolled up. We fear also that you do not give air early enough, nor in sufficient quantity. You cannot give too much air, especially early in the morning, not closing the house at night. We presume you water more than the once or twice a-week with liquid manure, giving enough at each time to show itself through the bottom of the pots, and that you keep down aphis.

Climbers for South-east Wall (*Patelin*).—Berberidopsis corallina Bignonia grandiflora, and Lardizabala biternata would suit, a slight protection being given in very severe weather. We would, however, have evergreens for a house wall—they are so much warmer-looking in winter, leafless plants giving a cold dreary aspect. You might have Escallonia macrantha, Ceanothus Veitchianus, or C. azureus, and Garrya elliptica. Ligustrum japonicum is also good. For wall-coverings they are preferable to climbers, except some of the close-growing kinds, as Ivy.

Funkia grandiflora alba not Flowering (*F. G.*).—We are not aware that this plant requires treatment different from that given to other Funkias. A warm sandy loam enriched with leaf soil, and a dry situation in winter, are what we have found requisite for all the Funkias. Except in wet heavy soils and cold situations they are quite hardy. Probably your soil is too rich, encouraging too free growth.

Magnolia Cuttings (*Idem*).—Magnolia macrophylla is difficult to layer, and slow in forming a union when inarched, and it will not strike from a cutting. It and all species with much pith, are best raised from seed. Many kinds, however, will strike from cuttings, putting-in the well-ripened shoots of the current year in sandy soil surfaced with sand, in a cool house, and covering with a hand-glass. This is best done at the end of summer—say in September. Some propagate Magnolias by putting-in cuttings of the young herbaceous-like shoots early in August in a cool house, shading from bright sun, and just keeping them moist.

Dwarf Camellias Flowering in Cold Pits (*Idem*).—The plants may be flowered in cold pits, but not well, as for several days they must be without air in winter, and being excluded from the light in severe weather for several days the flowers spot and are often far from satisfactory. All that is required for flowering Agapanthus umbellatus variegatus is time for the plant to attain sufficient strength, giving it a light airy position in a greenhouse, with abundance of water when growing.

Guano Liquid Manure (*S. H.*).—For your Roses and Geraniums half an ounce of guano to a bucket (2½ gallons), of water will be sufficient.

Lavender Disease (*H. Warre*).—We are sorry to say that we think you have a modification of the Lavender disease or mildew. We know of no remedy for the plants affected. There is only one palliative—namely, to plant slips from healthy plants, and to grow them in a comparatively poor soil. When the mildew attacked large plantations in Hertfordshire, we had a strong opinion it was the result of high cultivation. No doubt the rich ground told on the size and the number of flower-stalks, but the plants were encouraged far beyond their natural luxuriance.

Mushroom-growing (*Newark-on-Trent*).—From your description we cannot make out clearly your treatment. Was your small bed 3 feet long, 1½ foot wide, and 2 feet deep, and walled all round, covered with boards, &c.? Did the boards go over the bed, and did the 2 inches of fresh horse droppings go over the boards? For the latter purpose any litter would just do as well. If you put the fresh horse droppings on the top of the bed after spawning and earthing-up, you would encourage the spawn to run in the droppings instead of forming Mushrooms on the top of the soil. It is only on knowing these details that we can pretend to give advice to our readers. Now, in your case, such a small bed, made out of doors on the 22nd of March, would demand more care owing to its small size. The depth is very well, much deeper than we generally have beds, unless when we make a ridge one, but a bed merely 18 inches in width soon cools. Were we making such a bed we would watch carefully the time for spawning, and insert the spawn just when the heat was falling below 80°. Then if it still fell slowly, we would earth up, and make the surface firm and smooth; then if the heat showed signs of

falling, add a little covering of litter, and if it fell still lower towards 60°, add a little more, and round the brickwork too, and cover with boards or tarpaulin to keep wet out. If the bed is dry, give water at a heat of 75°.

Strawberry Forcing (*An Amateur*).—We do not think you ought to complain of the long fruitstalks of your Keens' Seedling Strawberry; that they fell over and broke was more your own fault. The stalks of Keens' Seedling, strong and healthy, were longer with us than usual. Small runner-plants of last summer in 6-inch pots threw up four and five strong fruitstalks, and the flowers were so numerous that we cut away more than four-fifths of them when the first flowers had set; but where we could do so, we put a twiggy stick into each pot, and tied the fruitstalks to it, still allowing the top part to hang down a little. We have had fine fruit on comparatively short fruitstalks, but, on the whole, we would rather see them longer if strong in proportion. Unless when the fruitstalk is very long and the pot is on a shelf that will not permit the fruit to hang on both sides, we would rather not stake at all; but we have had rows where the fruit would be in the way, or too much shaded, if not thus staked-up. Most of your questions you will find minutely answered at page 416, No. 533. You have a very good collection of Strawberries. For the earliest fruit in the orchard house we would recommend you to grow Black Prince. It is a small Strawberry and a little acid, but it is good when gathered just before it acquires the blackish tinge, and it is a wonderful bearer if kept in a cool temperature. It rarely should be above from 50° to 55° unless from sun heat, when from 5° to 15° more will be enjoyed by it. With us this season it has been something like a perpetual cropper, many 40-sized pots yielding three crops before we could make-up our mind to turn them out, two or three flower-stems appearing before we had quite gathered the first ones, and now, after being turned out into the ground, they are again becoming one mass of flower-buds. The next in earliness, and good for size too, would be Keens' Seedling, and if you wish for variety then follow with President, Rivers's Eliza, Dr. Hogg, and British Queen. The latter must have a good airy position to do well. Filbert Pine we have not grown either in the open air or under glass, and, therefore, cannot judge. Black Prince and Keens' Seedling are best for early production. The others named are all better for standing carriage.

Horse-Chestnut Bleeding (*W. H.*).—The following are notes by two good authorities:—"It is difficult, without seeing the tree in question and knowing something more of its past history, to judge of the cause of its disease, as the Horse-Chestnut is but seldom attacked in the way complained of, and generally succumbs to accidents, to which it is very liable even in a young condition, large limbs equivalent sometimes to half the tree being blown off. Yours, however, is a case of disease; and the first impression I would have on looking at the specimen of the bark is that the tree is starved—that is to say, it wants more food; and if the position in which it is growing is a poor shallow soil with an uninviting or pernicious subsoil, a covering of good soil on the top would do good. Many years ago I witnessed some alterations going on by the side of a highway, where an embankment was formed covering the roots of some Horse-Chestnut trees several feet deep on one side of the trees, but in the material there was a quantity of stone and other open-lying substances, and the trees were certainly improved rather than otherwise. If "W. H.'s" tree is languishing owing to want of food, a supply of such will restore it. I am also of opinion that a shallow soil overlying chalk is not suited to the Horse-Chestnut, and if the one in question be on a site of this kind additions on the top may be beneficial. I can hardly think any applications to the bark will do good, as I do not think the disease lies there, although the effects may be shown in that direction. The cause of the evil (the same as Vines and other fruit trees often suffer from) lies at the root, and perhaps these may have been ruthlessly cut and mutilated in making excavations for drains or other purposes. The work in such cases being put into the hands of mechanical men, trees and their welfare are totally disregarded. Perhaps some misfortune of this kind has befallen the tree; if so, it can only be remedied by examining the tips of the roots and supplying good soil for the bad that may have found its way there. If, as suggested before, more food is wanted at the top, a covering of a few inches may be put on at once, and towards the end of summer examined to see if it be occupied. If a pavement overlies the roots weak manure water may be of service, but I have more trust in fresh good soil.—J. R."——"It is hazardous to give even an opinion upon so slight evidence; but as an opinion is not doctrinal, if I may use the term, I venture several. First, the evil may arise from an unhealthy condition of the soil, but I hardly think so. The second, and the more probable cause, is some accident. For instance, a branch may have been broken off at some time, leaving a jagged wound by which rain finds its way down the drying pores or sap-vessels, causing internal decay; the rising sap, coming in contact with the decaying part, becomes unhealthy from an eruption, oozes out and runs down the tree, excluding the air, and thus causing decay. Thirdly, it may be the result of a gunshot or other wound, from which the sap oozes out, and wasps, hornets, beetles, and the larvæ of some of the moths are continually preying upon it in their season of activity, thus keeping the wounds open for continual bleeding. These are opinions founded upon facts which I have closely observed. They are, however, but opinions, and may be wide of the mark. In the present case I am sure you must feel how dangerous it is to give an opinion without seeing and closely examining the subject. Feeling much interested in arboriculture, this is a case I should much like to hear more about if you thoroughly investigate it.—W. B."

Covering Melon and Cucumber Frames (*C. P.*).—We do not consider it necessary to cover the lights with mats after May, indeed we have given up covering ours about a fortnight. Grapes ripening should have air at night. We leave about an inch opening along the whole length of the upper lights. It is sufficient to prevent moisture condensing on the berries and spotting the bloom. The Grapes are no worse of ripening slowly, only if this arises from the crop being heavy the quality will be inferior in colour.

Fuchsia and Vine Leaves Blighted (*P. H. C.*).—The shoots of the Vine and the Fuchsia leaves appear to be scorched, we think, by the sun shining powerfully on them whilst wet. There is no trace of insects. The remedy is to give air before the sun shines powerfully.

Seedling Rose (*R. Taperer*).—Evidently a seedling from that prolific parent Général Jacqueminot, and intermediate in colour between that flower and the Duke of Edinburgh. It is difficult to judge from a single specimen, and we advise the raiser to send some cut blooms to Nottingham, to the care of "the Floral Committee." The petals had good depth and substance, but the flower was not sufficiently double; as it, however, is only the second year of blooming, we have no doubt it will improve.

American Blight (*J. P.*).—Brush over all the parts attacked, using a mixture of paraffin oil and soft soap as you propose, and let us know the result.

Tree Carnations (*G. Brook*).—Any of the principal florists who advertise in our columns could supply them.

Cucumber Leaves Spotted (*H. H.*).—The leaves have every appearance of the Cucumber disease, for which there is no known remedy; they are of bright green colour where not destroyed, and the disease shows itself in brownish spots. We found under the microscope a number of eggs of thrips, and on unfolding the leaves detected with the naked eye a perfect insect, and very active, though the leaf was dried and fell to pieces on being crumpled. On fully opening the leaf and applying a lens we found a great many thrips alive. If they swarm so on a dried leaf, what must their number be on the plants? We would remove all the leaves like those sent us, and, indeed, all that are one-half so bad, and burn them. Then heat the pipes to a temperature of 160°, and with a brush apply a composition of sulphur, brought to the consistency of thin paint with a solution of 2 ozs. of soft soap to the gallon, until a vapour is raised which the operator cannot endure. The pipes should be gone over several times, and be kept hot for about an hour, but not higher than 160°. An hour afterwards syringe the plants, and every part, and sprinkle the pipes so as to fill the house quite full of vapour. The following day—for this must be done in the evening—shade from sun, and keep every part wet, but do not wet the plants, or at least have the foliage dry by night; then fill the house densely with tobacco smoke. Keep close, moist, and shaded the next day, and every alternate night for a week repeat the fumigation, then allow a week to pass and again fumigate, shading the following day. The plants may recover if kept more moist. Give air early, and shut up in the afternoon with a moist atmosphere.

Various (*E. R. P.*).—Doulton & Co, Lambeth, make the Chatsworth edging tile for collecting water. Write to them. The seeds of Pinuses may be sown now, but better in March. Three-inch pots will be sufficiently large for the seeds. Use a sandy loam. They do not require heat, the most tender only need a cold house. We could not say what makes a Buckland Sweetwater Grape's leaves yellow. Send us a specimen. Tulips, Hyacinths, and other bulbs are best kept on shelves in a cool dry place. Some remove all the loose coverings, and store the bulbs in dry sand in a cool place. We prefer keeping them on shelves. Dandelion is eaten as a salad, the roots being taken up in autumn or winter, and planted or placed in moist soil in forcing or Mushroom house, and covered so as to blanch the leaves like Endive. The leaves are used from 6 inches to a foot in length. Indian Corn or Maize is edible, the heads boiled before the corn becomes hard. It is prepared in other ways.

Grub (*J. R. H.*).—You should have enclosed one in a quill. The most effectual remedy will be to stir round each Lettuce and Cauliflower with a knife, and destroy each marauder found. A woman would go over the whole in a day. Chemical applications strong enough to kill the grubs would kill the plants also.

Names of Plants (*J. B.*).—We cannot name plants from their leaves only.

POULTRY, BEE, AND PIGEON CHRONICLE.

POULTRY-KEEPING UNDER DIFFICULTIES.

I was much obliged for Mr. Kell's letter on hatching disasters a few weeks back, but at the same time may I be pardoned for saying it provoked a smile, as I thought how utterly impossible its suggestions were either for me or many others to carry out? I have not a spare cellar of any kind, much less one "into which the frost cannot penetrate;" neither have I anyone who can go every hour to see how the hens get on. Mr. Kell is a happy man as regards his poultry arrangements. May he go on and prosper with them as he deserves! But for myself, limited space, limited means, and far more limited time have to be contended with. My poultry-keeping is emphatically carried on "under difficulties" of any and almost every kind, and that is the simple reason why so much of what I have written relates to "dodges" of one sort or another. They have been forced on me by hard experience, and there is probably hardly any despairing amateur whose case I cannot in some degree sympathise with. I have thought it may encourage some to know what my "advantages" at present are, and how I am forced to manage with them.

The first hen I and my brother ever possessed was given us by the mother of one of our servants when we were only a few years old. I can only remember that she looked to our childish eyes very big, that she used to sleep in a basket of straw in the kitchen, and that at last by the parental orders she was killed for dinner. *Our* hen killed! I can yet remember feeling what a shame it was, and what a cruel, cruel man I thought the man who killed her, and who, by the way, was also called in to similarly dispose of a large black and white rabbit, given us by the same motherly soul. I believe on both occasions I expressed my inability to eat a morsel, but, being a sensible child, afterwards changed my mind, and "tucked in" a pretty fair allowance of our defunct pets. But these are only childish memories, and even the house in which we then lived I can hardly remember, and no wonder, for I have lived in three since then, and could not have been more than about five years old.

My first real poultry experience began when a boy at school, and was in a small paved yard, where the same brother and myself went partners, buying the corn and selling the eggs to our mother at the market prices. The place may, perhaps, have been 20 feet square, all paved with large flags, and it may easily be imagined that we did not find it all smooth sailing, especially as the sun only shone there about two hours during each day. One or two of our first birds, in fact, died; we could not at the time tell why, but as we learnt more we did better, and at last actually made it pay. Food must have been cheaper then than it is now, for I can distinctly remember that for a long time we used to buy half a peck of good barley (our purchases were limited by our capital) for 4½*d.*, but probably eggs were also cheap in proportion, and I have no hesitation in saying that if we could keep fowls there with profit, they may be kept with profit anywhere. It was there I learnt much of what has been most useful to me since, and most especially of the individual habits and instincts, the understanding of which adds so much to the indescribable fascination of poultry-keeping, and without which no one can ever be a true fancier. On those flags I learnt the absolute necessity of fresh green food; in that confined space I learnt the evils of overfeeding, and what could be done by cleanliness and care.

The last two seasons we reared our own chickens. Our very first brood consisted of nine, and when they were hatched the whole house rejoiced over them, such dear little things as they seemed to our inexperienced eyes. They were a decidedly "mixed lot," but though the want of sun prevented their growing very large, and we fed too much (as I now know) on slops besides, I think we reared them all in perfect health; and as I know we sold the first pair for 3*s.* 6*d.* to a woman who kept a stall in the market, they must have been pretty fair for those days.

Then we had some Cochins, and I got the fancy, which has lasted ever since, for the feathered Asiatic breeds. We did not succeed with them, probably from want of study; but the large feathered races has ever since been my peculiar favourites. I like their grand appearance, I like their nicety of feather, I like their quiet disposition and "manageableness" generally, I like their constant egg-laying, and I like their noble proportions on the table. They are quiet, stay-at-home people like myself, and we get on together. Had we not then kept Cochins I should, perhaps, never have kept Brahmas.

But we had to give up, and for years I hardly ever saw a fowl. My beginning again was the fault of Mrs. "Nemo." She comes from the country, and thought she should like a fresh egg now and then. She got them, but she little knew what she was coming in for. I only started with a few Irish mongrels, but the fancy was "born in me," and it was not in human nature to go on like that. So I got some eggs from Pencilled Hamburghs, and we hatched a good lot; but in our limited space they never did well as regards egg-production, besides flying about like sparrows and giving no end of trouble. Meantime I had had my attention drawn particularly to Brahmas, and "took" to them instinctively. When I saw them for the first time I felt at once, "that's my fowl," and began to study them forthwith. And I may, perhaps, remark that I studied them for more than a year before I bought a bird—a plan I would strongly recommend, in degree at least, to all others who may be beginning. The result of this caution was, that with the first pen I ever bought, and the first time I ever showed, I won the first prize at the first Bristol exhibition, though I used my own judgment only, and they had been passed by as unworthy at Birmingham; and these birds gave the real "character" to my present yard, which is more or less descended from them. We had then just moved house, and the four fowls had the sole run of all our garden: hence they appeared in a "condition" I have never been able to acquire since, though I have bred and sold many birds of ten times their value. This garden I measured to-day, and it is just 67 by 35 feet, including a path 4 feet wide the long way up. In this space every year I now breed from four pens of fowls, and hatch about forty chickens, rearing to maturity rather more than half, and killing or giving away as early as I can those not good enough to be preserved. But I have taken up so much space with this long and personal introduction, that I must leave the consideration of what may be done with this space to another paper.—L. Wright.

THE YORKSHIRE GALA BIRD SHOW.

The able management and untiring zeal of Mr. John Wilson, the Secretary, carried to a successful issue the annual bird Show held in Bootham Field, York, in connection with the above gala, on the 14th, 15th, and 16th inst. There were upwards of three hundred entries of birds for competition, being one hundred more than at the previous show, besides many other choice specimens for exhibition. Mr. Wilson was assisted in the bird department by Mr. M. Millington, of York, well known for his exertions on behalf of the Rabbit fancy, to whose hands was entrusted the arrangement. Such an admirable collection of Canaries and British and foreign birds has not before been exhibited in York. The bird tent was a lively feature, and afforded great pleasure to the many visitors from the city, and likewise to those who poured in by "specials." Mr. Charles Wand, of York, exhibited in an ingenious cage a wonderfully trained Greenfinch, which, by the regular turning of a wheel at one end of the cage, played a diminutive organ. This performance was the source of much interest, as were also a pair of white Thrushes (to which a special prize was awarded by the Judges), taken from a nest at Clifton, near York, a few days back. An ornamental wire cage, of very skilful design and large, was exhibited by Mr. Pinder, of York, and received a special prize. Mr. J. Nicholls, of Acomb, near York, also showed a magnificent birdcage of immense proportions fitted on a stand with food-drawers, &c., the whole being fully 6 feet high. The following are the awards of the Judges:—

Belgian.—*Clear Yellow.*—1, — Gedley, York. 2, L. Belk, Dewsbury. 3, Stevens & Burton, Middlesbrough. *Clear Buff.*—1, — Baines, York, 2, — Calvert, York. 3, — Belk.

Norwich.—*Clear Yellow.*—1, — Baines. 2, Moore & Wynn, Northampton. 3, R. Triffitt, York. *Clear Buff.*—1, — Triffitt. 2, C. Burton, York. 3, W. Harland, York. *Even-marked Yellow.*—1, R. Hawman, Middlesbrough. 2, C. Burton. 3, Moore & Wynn. *Even-marked Buff.*—1, W. & C. Burniston, Middlesbrough. 2, Moore & Wynn. 3, — Baines.

Yorkshire.—*Marked Yellow.*—1, R. Hawman. 2, P. Rawnsley, Bradford. 3, Stevens & Burton. *Marked Buff.*—1, — Rawnsley. 2, R. Hawman. 3, Stevens and Burton. *Clear Yellow.*—1, — Hackera, York. 2, J. Clarkson, York. 3, Quinn and Cowl, York. *Clear Buff.*—1, C. Gray, Heworth. 2, — Hackers. 3, Messrs. Burniston.

Canary.—*Clear Crested.*—1, R. Triffitt. 2, — Belk. 3, Barwell & Jolly, Northampton. *Black-crested or Grey.*—1 and 3, R. Triffitt. 2, Moore & Wynn. *Even-marked Crested.*—1, — Triffitt. 2 and 3, Moore & Wynn.

Cinnamon.—*Dun.*—1 and 2, — Triffitt. 3, — Bradbury, Dringhouses. *Buff.*—1, — Triffitt. 2, Moore & Wynn. 3, — Baines.

Lizard.—*Golden-spangled* —1, R. Hawman. 2, — Harrison, Belper. 3, W. Kirk, jun., Market Weighton. *Silver-spangled.*—1, — Harrison. 2, — Baines. 3, Stevens & Burton.

Goldfinch Mule.—*Marked.*—1, R. Hawman. 2, Stevens & Burton. 3, Messrs. Burniston. *Orange.*—1, Stevens & Burton. 2, — Harland. 3, — Burton.

Canary.—*Any other Variety.*—1, Barwell & Jolly. 2, R. J. Smith, York. 3, — Baines. *Nest of Yellow.*—1, — Harland. 2, — Triffitt. 3, — Russell, York. *Nest of Buff.*—1, — Baines. 2, — Triffitt. 3, — Harland. *Nest of Crested.*—1, Mrs. Calvert, York. 2, — Baines. 3, R. J. Smith.

Lizards.—*Nest of Gold or Silver-spangled.*—1, — Baines. 2, Mrs. Calvert. 3, Mrs. Todd, York. *Cage of Six Gold or Silver-spangled.*—1, — Harland. 2, — Baines. 3, — Triffitt. *Collection of Twelve Birds.*—1, — Calvert. 2, Mrs. Calvert. 3, — Nicholls, Acomb. *Collection of Twelve British Birds.*—1, T. Bailey, Sowerby, Thirsk. 2, — Calvert, *Yellow Cock.*—1, Quinn & Cowl. 2, J. Staveley. 3, — Barnes. *Buff Cock.*—1, — Triffitt. 2, — Hackers. 3, — Calvert. *Marked Canary.*—1, — Burton. 2 and 3, J. H. Dossor, York. *Crested Canary.*—1, Quinn & Cowl. 2, Porritt & Raw, Ruswarp, Whitby. 3, R. Reed.

Parrot.—1, J. Clarkson. 2, Mrs. Wilkinson, Whitby.

Goldfinch.—1, — Triffitt. 2, — Gray.

Linnet.—1, — Harrison. 2, — Harland.

Bullfinch.—1, W. Burniston, Middlesbrough. 2, Miss Jones, York.

The Judges were Mr. George J. Barnesby, Derby, and Mr. Cowper, York.

ROMFORD POULTRY SHOW.

This Show was held on the 15th and 16th inst. in conjunction with that of the Essex Agricultural Society, but as poultry and Pigeons are not amongst the fancies of the members of that Society, the Show was managed by a local Committee. An extra charge for admission was made, and from the number of people who paid their shillings we should fancy it must have proved a great success.

The birds were exhibited under a tent, which was not nearly large enough to hold the number sent, consequently they were much distressed from the intense heat and want of air. In many cases it was impossible to see the birds in the pens from the want of light and bad arrangement. We noticed many ladies declined venturing down the dark, narrow, crowded, and badly ventilated alley where their favourites, the Bantams and Pigeons, were shown. Under these adverse circumstances the Judge must have had great difficulty in making his awards. Still the judging was very satisfactory, and we were glad to find a proper notice had been taken of the hen, the prizes not merely going to the best cock alone, but to the best pair. Coloured *Dorkings* were an even lot, in capital condition. The first-prize birds were uncommonly good, closely pressed by the second; the cock was hardly in such fine feather as the other. The class for Any other variety was poor. Buff *Cochins* were few, but good. The third-prize cock had horribly scurvy legs and feet, as had also some of the Partridge Cochins. Dark *Brahmas* were good, and mostly well shown, especially Mr. Lingwood's bird. The first-prize Light cock was a grand bird, but he had with him an inferior hen, while in the second-prize pair was a capital hen matched with a fair cock. The Judge had evidently carefully weighed them together, and given the first prize to the best pair. *Game* were good in quality and feather. The second-prize cock, a Brown Red, was a large rakish-looking fellow, and would no doubt have been first had not one of his sickle feathers been broken. A very fair pair of Piles were third in the Any variety class. The first-prize *Spanish* were a long way ahead of the others. The second-prize cock had on one side of his face a large dry scab; the third was a good bird with a bad hen, but we liked another pen better than either of these. The whole class was above the average for the

time of year, and with one or two exceptions, the birds were well shown. *Hamburghs* were very inferior, and call for no remark; one exhibitor sent two hens in place of one, and the second-prize Spangled cock had a frothy running at one eye. *Polands* only had two entries. *French* were a good class, the first prize going to La Flèche. Game *Bantams* were numerous, but as to the quality we can say nothing, the want of light prevented one from forming an opinion, and however the Judge managed under the difficulties to award the prizes was a mystery to us, and we certainly thought we saw a commended pen better than the winners, but possibly the darkness might have deceived us. Aylesbury *Ducks* were not in form; Rouen were better. The first-prize drake we recognised as a previous winner. *Geese* and *Turkeys* were few, and of moderate quality.

The *Pigeons* were not numerous, but there were some very good birds sent, particularly the Carriers, Tumblers, and Dragoons.

There were twenty-five entries of *Rabbits*, and amongst them we noticed some very large and long-eared ones. They were placed on the ground, so that one could see nothing but their backs, unless you laid flat on the ground.

Dorkings.—*Coloured.*—1, F. Parlett, Great Baddow. 2, W. Tippler, Roxwell. 3, J. Norman, Colchester. *hc*, J. Norman; J. Webb, Romford. *Any other Variety.*—1, F. Tearle, Newmarket (White). 2, G. Hine, Dorking (Blue-speckled). 3, J. Drake, Ongar.

Cochins.—*Buff.*—1. H. Lingwood, Needham Market. 2, H. Lloyd, jun., Birmingham. 3, J. K. Fowler, Aylesbury. *Any other Variety.*—1 and 2, H. Lingwood.

Brahmas.—*Dark.*—1, J. H. Cuff, Holloway. 2, H. Lingwood. 3, J. Hill, Brentwood. *hc*, G. Griggs, Romford. *c*, H. Dowsett, Chelmsford. *Light.*—1 and 3, J. Pares, Guildford. 2, F. Crook, Forest Hill.

Game.—*Black-breasted and other Reds.*—1, F. Harding, jun., Chingford Hatch. 2 and 3, S. Matthew, Stowmarket. *c*, J. Jeken, Eltham. *Any other Variety.*—1 and 3, S. Matthew. 2, J. H. Salter, Tollesbunt D'Arcy.

Spanish.—1, Nicholls Brothers, Camberwell. 2, R. Wright, Holloway Road. 3, J. Norman, Colchester.

Hamburghs.—*Gold or Silver-pencilled.*—1, W. K. Tickner, Ipswich. 2, G. Hine. *Gold or Silver-spangled.*—1, L. Wren, Lowestoft. 2, F. Tearle, Newmarket.

Polands (Any variety).—1 and 2, W. Patrick, Lynn.

French Fowls (Any variety).—1, J. K. Fowler. 2, J. S. Price, Potters Bar. 3, W. Tippler. *hc*, W. Lee, Hornchurch. *c*, W. Boncher, Notting-hill.

Bantams.—*Game.*—1, G. B. Francis, Romford. 2 and 3, C. H. Webb, Chelmsford. *hc*, Rev. F. Cooper, Cirencester. *c*, W. B. Jeffries (2). *Any other Variety.*—1, F. Tearle. 2, G. B. Francis. 3, J. Simmons, Ongar.

Ducks.—*Aylesbury.*—1 and 2, J. K. Fowler. *c*, W. Tippler. *Rouen.*—1, G. Hine. 2, H. Dowsett. *Any other Variety.*—1, Miss Mashiter.

Geese.—1, W. Tippler. 2, G. Hine. *hc*, Miss J. Mashiter.

Turkeys.—1, Mrs. J. Mayhew.

Selling Class.—1 and *c*, D. C. Campbell, M.D. 2, H. Dowsett. 3, E. Sheerman.

PIGEONS.

Carriers.—1, H. Yardley, Birmingham. 2, H. M. Maynard, Ryde.

Pouters.—1, H. Yardley. 2, H. Laver, Colchester (White).

Tumblers.—*Almond.*—1 and 2, J. Ford. *Any other variety Short-faced.*—1, W. Barnes, Romford (Black).

Owls.—1, H. Yardley.

Barbs.—1, H. Yardley. 2, H. M. Maynard. *c*, D. P. Gooding, Colchester (Black); D. Robertson, Romford.

Fantails.—1, H. M. Maynard (White). 2, H. Yardley.

Jacobins.—1, H. M. Maynard.

Antwerps.—1, H. Yardley. 2, J. Webb.

Trumpeters.—1, E. Sheerman, Springfield.

Dragoons.—1. A. W. Wren, Lowestoft. *hc*, F. Graham, Birkenhead.

Runts.—1, J. S. Price. 2, H. Laver.

Any other Variety.—1, Mrs. J. Cross, Brigg. 2, H. Yardley.

Rabbits.—*Lop-eared.—Buck.*—1, A. Harvey. 2, C. King. *hc*, J. Quick. *c*, T. J. Inman; A. Harvey. *Doe.*—1 and 2, C. King. *hc*, J. Quick. *c*, T. J. Inman; A. Harvey. *Heaviest* (Any kind).—1, W. Arkwright, Chesterfield. 2, A. H. Easten. *Any other Variety.*—1, C. King, St. John's Wood. 2, J. Boyle, jun., Blackburn. *hc*, S. G. Hudson, Hull; J. Boyle, jun.; A. H. Easten; C. King.

Judge.—Mr. Tegetmeier.

THORNE POULTRY SHOW.

No show of poultry and Pigeons at Thorne has been nearly so good as that held last week, but, unfortunately, in a continuous downpour of rain that must have very seriously affected the receipts. Such weather is a calamity to any committee; but it is only justice to say that the Committee, as a body, and Mr. Micklethwaite, the Honorary Secretary, did all that could be done to make everyone as comfortable as the circumstances permitted. The pens and general arrangements were, as they always are at Thorne, very good, but if submission to the rule that all specimens must be penned by 10 A.M. were strictly enforced, it would prevent the possibility of complaint from those owners whose punctuality was admitted, and be in perfect fairness to every exhibitor.

Scarcely ever so far north has so generally good a class of *Spanish* fowls been on exhibition; they would have been a treat to visitors even at a Bristol or London show. *Cochins* and *Brahmas* showed badly, though good specimens were exhibited, the constancy of the rain destroying for the time all their beauty, and Brahmas seemed equally at a disadvantage. As for the Grey *Dorkings* they were almost wholly shown out of feather, but the *Game* classes were perfect. Miss Mary Fletcher may well be proud of her laurels, some of the very best birds in the kingdom being competitors. Miss Fletcher and Mr. Aykroyd were the cup-winners with specimens that, for condition, could not be surpassed. As might be expected, the *Hamburghs* and *Polands*, many of which were perfectly saturated with the rain, cut a very sorry figure, yet these classes contained the very best birds of the present day. The Game *Bantam* class was both large and good, and though many visitors expressed their opinion that the Game Bantams were beginning to fall back to the drooping wings of former shows, we ourselves attribute it entirely to the chilling weather, and the consequent comfortless position of the birds on such a day. The *Geese* and *Ducks* were good, but had to their hearts' content revelled in wet and dirt, as their position was the ground, and all these birds seemed equally dirty and equally happy.

Great care and attention were given to the poultry, and not less to the Pigeons and Rabbits. The latter division seemed to have comparatively escaped the constant rain, and was consequently seen to the most advantage of any portion of the Show, though even here visitors were few and far between, for who would come out who could stay at home?

Spanish.—1, T. C. & E. Newbitt, Epworth. 2, H. Beldon, Bingley. *hc*, Burch and Boulter, Sheffield; J. Powell, Bradford; J. Thresh, Bradford.

Cochin-China.—1 and 2, H. Lacy, Hebden Bridge. *hc*, J. Watts, King's Heath. *c*, W. A. Burnell, Southwell.

Brahma Pootra.—1 and 2, H. Lacy. *c*, Dr. Holmes, Whitecotes, Chesterfield.

Dorking.—1, J. White, Warlaby. 2, R. W. Richardson, Meaux Abbey. *c*, W. Morfitt, Goole; W. Swann, Bedlington.

Game.—*White and Piles.*—1, Salea & Bentley, Crowla. 2, B. Jarvia, Mansfield. *Black-breasted and other Reds.*—1, Miaa M. Fletcher, Stoneclough. 2, Salea & Bentley. *hc*, C. Chaloner, Whitwell; H. M. Julian, Hull. *Duckwings, and other Greys and Blues.*—1, Misa M. Fletcher. 2, C. Chaloner. *hc*, W. Boyes, Beverley. *Any Breed.*—Cup and 3, Miaa M. Fletcher. 2 and *hc*, C. Chaloner. *Cock.*—Cup, E. Aykroyd, Leeds. 2, Miss M. Fletcher. 3, T. Oldfield, Shilden. *hc*, H. M. Julian, Hull; Sales & Bentley.

Hamburghs.—*Silver-spangled.*—1, H. Picklea, jun. 2 and *c*, H. Beldon. *hc*, Ashton & Booth. *Golden-spangled.*—1, H. Pickles, jun. 2, F. Rollinson. *hc*, F. Rollinson; H. Beldon. *c*, E. T. Gardam, Newcastle. *Silver-pencilled.*—1, H. Pickles, jun. 2, H. Beldon. *Golden-pencilled.*—1, H. Pickles, jun. 2, H. Beldon. *Black.*—1, H. Beldon. 2, no competition.

Any Variety.—1, H. Beldon (Silver-spangled Polands). 2, H. Pickles, jun. (Silver-spangled Polands). *hc*, Mrs. J. Cross, Appleby Vicarage (Creve-Cœura); Mra. B. Frank, Campsall (Creve-Cœur). *Cock.*—1, H. Lacy, Hebden Bridge (Partridge Cochin). 2, H. Beldon (Silver-spangled Poland). *hc*, B. Jarvis, Mansfield (Dorking). *Hens.*—1, H. Beldon (Golden-spangled Polanda). 2, J. Powell (Black Spanish). *hc*, C. Chaloner (Black Red Game); H. Lacy (Buff Cochina); — White, Driffield (Dorkings); J. Thresh (Black Spanish). *Chickens.*—1, R. Richardson (Grey Dorkiogs). 2, B. Jarvis (Brown Red Game).

Bantams.—*Game.*—Cup, J. Oldroyd, Wakefield. 2, Sales & Bentley. 3, Messrs. Newbitt. *hc*, Messra. Newbitt; W. Adams, Ipswich. *c*, Messrs. Newhitt; A. Smith, Northowram. *Any variety*—1, H. Beldon (Pekin). 2, S. & R. Ashton (Blacks). *hc*, E. R. Turner, Boroughbridge.

Geese.—1, E. Leech, Rochdale. 2, Rev. G. Hustler, Stillingfleet.

Gins.—1, Mra. J. Furniss, Crowle. 2, Rev. G. Hustler.

Ducks.—1, E. Leech (Rouens). 2, J. Williams, Wath-on-Dearne, Aylesbury.

Selling Class.—1, J. Hepworth, Bearswood Green (Game). 2, G. Palfreyman, jun., Heeley (Dark Brahmas).

PIGEONS.

Carriers.—1, H. Yardley, Birmingham. 2, E. Horner, Harewood. *c*, E. Brown, Sheffield.

Pouters.—1, E. Horner. 2, R. P. Moon, Driffield. *hc*, H. Yardley; G. Sadler, Boroughbridge. *c*, H. Adama, Beverley.

Tumblers.—1, H. Yardley. 2, H. Adams. *hc*, E. Horner (2); H. Brown, Walkley; F. Moore, Burnley; W. Harvey, Sheffield.

Jacobins.—1, F. Waitt, King's Heath, Birmingham. 2, R. G. Sauders, Leven. *hc*, Mesars. Newbitt; F. Waitt; E. Horner, Harewood.

Nuns.—1 and 2, H. Yardley.

Trumpeters.—1 and 2, E. Horner. *hc*, W. Harvey.

Turbits.—1, H. Yardley. 2, H. Lawson, Hull. *hc*, E. Horner.

Fantails.—1, H. Yardley. 2, W. H. Tomlinson, Newark-on-Trent.

Owls.—1, E. Horner. 2, R. P. Moon, Driffield.

Barbs.—1 and *c*, H. Yardley. 2, E. Horner.

Any Variety.—1, W. Harvey. 2, T. C. Benson, Sunderland (Turkish Blondinettes Satin). *hc*, H. Yardley; H. Lawson, Hull (Dragoons); H. Adams (White Dragoons); E. Horner, Harewood; J. Watts.

Selling Class.—1 and *c*, J. E. Crofts, Blyth (Black and Yellow Magpies). 2, C. Gravel, jun., Thorne (Kites).

Rabbits.—*Lop-eared.—Buck.*—1, C. Gravel, jun. 2, A. H. Easten, Hull. *Doe.*—Cup, C. Gravel, jun. 2, H. Ridley, York. *hc*, A. Creases, Lovereall Hall, Doncaster; J. J. S. Clarke, Hatfield; A. H. Easten; S. Andrews, Sandall. *Any Variety.*—1, W. H. Tomlinson, Newark (Himalayan). 2, Master T. G. Woodley Thorne. *hc*, H. Cawood, Thorne.

Mr. Edward Hewitt, of Birmingham, and Mr. John Douglas, of Clumber, were the Judges.

IN THE FANCY—STROUD CANARY SHOW.

(*Continued from page* 413.)

A friend writes, "You are a long while in getting to Stroud." Don't blame me, it all lies at Jenner's door. Vaccination is a great institution, but decidedly opposed to the development of idea in the subject. I admit the beauty and simplicity of the process. I willingly concede that the little hermetically sealed capillary glass tubes are a great advance on the glass squares and ivory points of a bygone day. The double-pointed lancet, too, is a nice little instrument—very, and very sharp as well. The projection of the tiny globule of pure lymph is most interesting. I admit it all. The whole thing is invested with a character no doubt fascinating to the medical "fancy" in its mysterious action. Still, that is no reason why I should have allowed an enthusiastic disciple of Esculapius and devout believer in Jenner, a man who bathes in Condy's fluid and scents his handkerchief with carbolic acid, to operate on me after the fashion of the man in the market-place, who undertakes to remove "corns, warts, *hor* bunions," or to take "pitch stains, tar stains, wine stains, grease stains out of silks, satins, bombazines, or any material whatever," and failing success to offer himself up a sacrifice to outraged popular opinion, and have his head "taken off at the block!" But I did. In an evil moment I turned up my shirt sleeve and permitted that devotee of vaccine science to "puncture my epidermis." That's what he called it—puncture my epidermis. And that's how it is I have been so long in getting to Stroud.

I was disappointed in not meeting "Wiltshire Rector" there, for I had promised myself a walk round the tents with him, and a few lessons on poultry and Pigeons, about which I know comparatively nothing. My duties lie in the last of four (I think) long white tents, which contained the 1237 entries of Stroud Show. I must admit that at the first glance the large pens with their stately occupants threw

the small show cages and their tiny tenants into the shade. For a moment, only a moment—and I most penitently confess my sin—I thought the Canary looked small beside the great lumbering Cochin; but when I ventured to suggest that poultry-fanciers had certainly done much good in producing such flesh-bearing birds, and modestly inquired if they laid correspondingly large eggs, my cicerone turned on me with a look—such a look!—pity, horror, contempt, scorn, all combined; and with one word, "Feather, sir, *feather!*" he took an early opportunity of leaving me. And so I turned to the Canaries again, a wiser man; and as they seemed to welcome me with a cheerful song, and not a noise something between a howl and a groan, which the Cochins were busy rehearsing, I thought that if it were neither a question of flesh nor eggs, but simply feather, then the one "fancy" was as good as the other. *Chacun à son goût.*

A Canary Show in the month of May is unusual. Most of the best birds are either up for breeding, or are so out of condition from a long exhibition season as to be laid on the shelf. But there was a very ready response to the Stroud schedule, which, so far as Canaries are concerned, if issued at another time of the year, would command that attention of the principal All-England men which it deservedly merits.

It will be unnecessary to refer to the prizewinners very minutely, many of them having appeared on the stage before. In Clear Buff Norwich Mr. Close, of Derby, was somewhat indebted for his first place to the comparatively uncertain light of early morning filtered through the canvas covering. A large bird of fair colour, it showed to advantage under a not very strong light; but the midday sun developed more quality in 1057, Mr. Walter, who under other circumstances would probably have been first.

The Variegated Jonque Norwich contained some very excellent birds, Moore & Wynne taking first with their old bird, and Mr. Close second with a remarkably good specimen, marked on each wing, and having a fair cap, superior in quality to 1073; Moore & Wynne third, marked wings, eyes, and cap. Variegated Buff Norwich were not superior, 1080, Mr. Close, approximating most nearly to exactness, but short of quality. Moore & Wynne were first, second, and third in "Any other Variety" with three grand crests which have done good battle before.

Belgians were not up to the mark. The very busy character of the surroundings was against their performing well.

Mr. Ashton sent some good Lizards. They must have been laid up in lavender purposely for Stroud, showing none of the signs of matrimonial squabbles which many birds present at this period of the year. Mr. Mackley's were also good. Mr. Ashton was first in "Any other Variety" with a superb Coppy, and Mr. Close second with Variegated Cinnamon, which would make many a north countryman's mouth water.

Goldfinch Mules (variegated) were not in good condition. But what can you expect in May? Dark Mules were better, the first Mealy bird being one of a kind bad to beat.

"Any other variety of Mule" contained the usual curious hybrids—Bullfinch-Goldfinch, Bullfinch-Linnet, Canary-Linnet, &c. Mr. A. Webster, jun., was first with Bullfinch-Goldfinch, but it was a near thing between it and Mr. Ashton's bird, a similar hybrid. Mr. Spence's well-known Linnet-Canary Mule was second. Mr. Barnesby showed a fine specimen of this cross, a bird full of colour and well marked. I am not certain whether my description is quite exact, but when I say marked neatly on each wing and head all dark I think I am sufficiently near to convey a just idea of it.

British birds were good, especially the Goldfinches. The first and second, Mr. W. Arkwright and Capt. Hawkins Fisher, were nice birds. The first, although a little injured in plumage, was to my eye a Goldfinch extraordinary. Mr. Harrison's Skylark was a picture.

Foreign birds were well represented, comprising about thirty entries, conspicuous among which were two American Horned Owls and an "Australian Magpie or Laughing Jack," whose chief performance appeared to be a habit of falling into his water-dish and struggling to get out of it.

I find I have only just time to send this to the post. A few words next week on Canary management.—W. A. Blakston.

RABBITS AT STROUD SHOW—AWARDS BY POINTS.

I was glad to see from the report in your Journal of the Stroud Show, and also from the remarks by Mr. Rayson, that it had been a success, and so far as I know I believe Mr. Rayson's decisions have given satisfaction to the exhibitors. But what I have to complain of is, that the cup should have been given to Mr. King for a lot of second and third-class Rabbits, instead of to the best Rabbit with the most points. I entered a Rabbit which took the first prize in its class; I also entered it for the cup, believing this was to be given to the Rabbit possessing the most points of merit, and you may judge of my surprise when I found that the points had to be taken out of second and third-class Rabbits to defeat the first-class ones. I think this anything but satisfactory. Had the Committee said that a cup would be given to the most successful exhibitor there could have been no misunderstanding or dissatisfaction. I hope next year, if a cup be given, it will go to the best specimen in the show, or else let it be perfectly understood that it will be given to the most successful exhibitor; then those with but one or two good Rabbits need not enter, and those with second and third-class ones can do so. But I cannot see much honour in any person taking silver cups with second and third-class cattle, poultry, Pigeons, or even Rabbits, in preference to first-class ones.—J. Hume.

AN IRISH BEE-KEEPER'S MANY DIFFICULTIES AND QUERIES.

On examining the super of my Woodbury hive, I find the bars are moveable, as the crown-board can be unscrewed and taken off. But of what use are these bars in a super except to put a stop to breeding by means of them as soon as it is discovered, taking out the bar and comb and cutting out the brood? Yet I cannot see how the bar and comb can be taken out when the latter is fastened at the sides and below. Of what use, then, are those bars in the super? My super is 13 inches by 13 (inside), and 6 inches deep, with eight bars. How much honey will it contain?

One of my stock hives swarmed yesterday (June 8th), and as I had no empty hive in which to put the bees, in order to shake them from it in the evening in a cloth, and so hive them in my new Woodbury, by putting this over them, I took the crown-board off the Woodbury, put on it a bottomless and topless box 14 inches by 14 inches, and 6 inches deep, and shook the cluster of bees into this. I then covered the intervening box with the hive's crown-board, and when all was quiet removed it to its stand, facing north, as do all my hives. Now, here was the Woodbury hive with 6 inches space between the top of the bars and the top of the crown-board. I hoped that during the night the bees would go down among the frames. To-day (June 9th) I donned my bee dress, and lifting the crown-board found the bees in a cluster attached to it. I lifted it as high as my shoulders to allow of the bottomless topless box being removed. This done I shook the bees as well and as gently as I could, down into the frames. Is it not curious that they had made a lump of comb about as big as a hen's egg on the crown-board just when they clustered? I removed it, it was quite soft, and I stuck it as best I could in a corner of one of the frames.

In the crown-board of my Woodbury there are three openings, with their covers or stoppers. In a floor-board belonging to the super already mentioned there are only two, the long slits. Now, in putting on this super am I to remove the hive's crown-board, and if so, what am I to put, or am I to put anything, between the hive and the super? Is the board that is with the super and has the two slits meant to go between, for if I put it even and straight on the top of the super the slits are closed by the bars? Can glasses, &c., be worked on the top of this super? If so, would not the hive's crown-board be suitable for working three at a time, one on each slit, and one on the round hole? If drones and the queen were excluded by the slits in the board between the hive and the super, surely no opening however large would be objectionable above that.

When a queen of the Ligurian breed is introduced into a native stock, will not her progeny be hybrids, unless she has been impregnated by Ligurian drones before leaving? If those "big" bee-keepers whose notes appear in the Journal, were to preserve the bits of combs containing queen brood when they excise all the royal cells, and were to forward them carefully packed in wadding to their purchasers, would not that be a safer way of ligurianising a bar-frame than sending a live queen? Could not comb containing Ligurian drone brood be likewise sent?—A Galway Bee-keeper.

[Perhaps the chief reason for having bars in supers, is to be enabled to remove the combs—after the filled super is taken off the hive—entire and without waste or crushing. They are also useful when brood in them happens to be discovered. There is not the slightest difficulty in removing the bar and comb, even if fastened to the sides, if a properly curved honey knife be used. The combs are seldom fastened to the surface of the board below. Perhaps a super of the dimensions you mention would contain 25 lbs. to 30 lbs. The swarm hived as described would be sure to cluster in the top box, and it was not at all curious that a piece of comb attached to the crown-board should have been commenced. The adapter, or loose bottom of the super, is intended to be placed on a board or top having similar side openings. The central hole in the cover of the stock hive is intended chiefly for feeding when

necessary. If liked, the crown-board can be removed altogether, and the adapter only, between the super and the bars, be used. Glasses are not placed on the top of the super. You had better obtain "Langstroth on the Honey Bee," which though not treating of the management of the Woodbury hive, is the best authority as regards the working of frame hives generally. It may be obtained through any bookseller. The progeny would assuredly be hybrid. The inmates of the royal celle so excised and sent to a distance, would be dead before they could be inserted in the combs of the hives intended for them; nor would the transmission of brood comb be likely to be attended with more fortunate results.]

OUR LETTER BOX.

W. Jackson, Blakedown, Kidderminster, has had postage stamps sent to him for Spanish fowls' eggs, and has not sent them to E. Hall, Chelmsford, nor yet replied to his letters.

"T. H. Kilshaw, 4, Kensington Street, Kensington, near Liverpool, is well known. I have had several applications from him for valuable birds. He is supposed to go by many other names, including J. R. Reed, Wavertree, near Liverpool, and of Lea Green, near Rainhill, Lancashire, &c.—J. H. Watkins, *Byford*."

G. W. Cooper.—Mr. Bulmer, of Spalding, says he sent him Black Barb Pigeons and was not paid.

Bedlington Show.—Mr. Yardley took the first prize for Carriers, and not the second as reported.

Undubbed Game Cock (*A Subscriber*).—He would have no chance of winning unless dubbed.

Bantams with Dorkings (*North Devon Farmer*).—You may safely act on the opinion of the "Wiltshire Rector." We have kept Bantams and large fowls together for years without any "mésalliance."

Chickens Dying (*C. A. W.*).—That which reared the first should rear those that follow them. You on the spot should be better able to ascertain the cause of failure than we are. What has the alteration been in the treatment and management? When chickens have neither gapes nor catarrh we seek for some other cause for discontent and death. There is a favourite theory in the present day, that all diseases spring from parasites, and we believe your chickens die from them and their effects. These latter are constant restlessness, dissatisfaction with everything, loss of appetite, perishing of body, and final "give it up." The cure is to provide them in all their haunts with wood ashes, road grit, and bricklayers' rubbish. As soon as they bask in either of these, the parasites are done away with. If none of these are at hand—and in wet weather it is sometimes difficult to find dust of any kind—then dip the end of your finger in oil, put a few drops under the wing, on the back, and at the poll. As they require support give them some bread steeped in strong ale. You will also do well to have plenty of camphor in all their water.

Fowls for Egg-producing (*E. R. P.*).—For egg-producers, we advise you to keep Brahmas. For the table, the Brahma is improved by being crossed with the Dorking. The best plan is to put a Dorking cock to Brahma hens. If the best quality of poultry is desired, it will be far better to keep pure Dorkings. They are the best table fowls in the world.

Guinea Fowls (*Idem*).—They are fond of choosing their own roosting places, and have a preference for trees, but where they have been accustomed to a house they will go into it to roost. They almost always steal their nests. They should be kept in pairs, as they are monogamous. They are not particularly quarrelsome, but no birds should roost with fowls, a fowl-house should be devoted exclusively to fowls.

Feather-eating Fowls (*G. H. P.*).—We can tell you no cure, except giving your fowls their liberty. We suffer from it with birds that are in confinement, but never when they are at liberty. A liberal supply of green food, especially lettuce, tends to lessen the propensity.

Sheep's Paunch (*Subscriber*).—We do not know whether that particular part of a sheep is good for poultry, but all cooked meat chopped fine is good feeding. Anyone who can discover good and cheap food will be a benefactor, but our experience is, as a rule, cheap things are dear.

Silver-Grey Dorkings (*An Old Subscriber*).—We have no difficulty in rearing, nor do we think them more delicate than any others. Our difficulty is about feather; so many of them offend in that particular. We are convinced that in breeding for feather, everyone must breed well and kill well. All that will not embellish a show must furnish the spit or the stock-pot.

Fowls Over-fat, Livers Diseased (*Hants Housewife*).—You over-feed; we wonder your fowls lay even fairly, but they obtain other food beside that you name. That would not make them fat inside. Internal fat prevents laying, and eventually causes death from the large, pale, unhealthy liver. The gall is unable to circulate, and is absorbed by the liver. Do not change your food, but give less, and as a beginning give nothing, positively nothing. That will be a cure. You have probably gone on with the same dietary you had in the winter. Recollect they want less, and the grass run yields much more.

Rabbits at Stroud Show (*E. W.*).—The longest-eared Rabbit at the Show at Stroud measured 22½ inches by 5½ inches, and some three more were almost equally good in the car, and the exhibitors were Messrs. Easten, Gravel, King, and Ridley.

White-eye Pigeon (*Reader*).—We sent your note to a good authority, and he replies as follows—"I am pleased to find that 'Reader' has found some one to solve his problem satisfactorily. The White-eye is the Volant he discovers, and he now wants to know whether the White-eye, the Volant, and the Cupulet are not synonymous. He will yet probably discover that they have other names also, but the most appropriate one for such cross-bred birds is that of monograi, as I have before said; and notwithstanding the book he quotes I adhere to my opinion that the White-eye, as described by 'Reader,' is a cross between the inferior Antwerp and the Tumbler, and as such they cannot be regarded as pure in breed. And if, as 'Reader' and his informants affirm, the breed is imported from Belgium, I am the more satisfied of their being of the Antwerp race, for birds in Belgium are chiefly regarded for their homing properties; purity of race and beauty being almost ignored in the endeavours to propagate the best and fastest of flying Pigeons."

Grub near Hive (*L.*).—The larva found outside your hive is not that of the honeycomb moth; in fact, it is not even Lepidopterous, being that of one of the two-winged Syrphideous flies.—I. O. W.

METEOROLOGICAL OBSERVATIONS,

Camden Square, London.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude 111 feet.

Date. 1871. June.	9 A.M. Barometer at 32° and Sea Level.	9 A.M. Hygrometer. Dry.	9 A.M. Hygrometer. Wet.	9 A.M. Direction of Wind.	9 A.M. Temp. of Soil at 1 ft.	In the Day. Shade Temperature. Max.	In the Day. Shade Temperature. Min.	In the Day. Radiation Temperature. In sun.	In the Day. Radiation Temperature. On grass	Rain.
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
We. 14	29.921	62.8	60.7	S.	56.3	74 4	55.5	119.6	56.8	0.410
Th. 15	29.861	63.7	62.7	S.E.	57.4	75.2	57.2	120.2	54.3	0.202
Fri. 16	29.787	66.2	62 8	S.W.	58.3	76.0	57.4	112.0	58.3	0.245
Sat. 17	29 621	63.3	60.9	E.	59.3	68.1	57.3	86.7	56.4	0.500
Sun.18	29.619	63.0	57.1	S.W.	58.6	72.1	54.4	114.2	54.2	0.130
Mo. 19	29.584	62.0	57.1	S.	58.8	72.1	53.0	121.2	53.0	0.670
Tu. 20	29.590	62.3	57.8	N.E.	58.5	69.2	52.8	117 3	49.3	0.150
Means	29.712	63.3	59.9		58.2	72.4	55.4	113.0	54.6	2.307

REMARKS.

14th.—Wet in night and early morning; fine from noon till 4 P.M., then rain, with lightning at night.

15th.—Very showery and damp till noon, then fine till 5.30 P.M.; wet evening, with lightning at 10.30 P.M.

16th.—Dull morning, fine afternoon, rain from 5.30 P.M, and lightning at night.

17th.—Very dark in the morning, a little sun at noon; rain commencing at 2.30, and continued at intervals all day, some very heavy showers; thunder at 3.20 P.M.

18th.—Showery morning, fine afternoon and evening.

19th.—Fair in morning, thunderstorm from noon to 3 P.M., very heavy rain and hail from 2.25 to 2.40 P.M., fine night.

20th.—Sunshine and cloud till 1.12 P.M., when thunder was first noticed, the storm increased for some time, and did not subside till 3 P.M, there having been hail at 2.29; dull and showery the rest of the day.

A warm and very wet week, with thunderstorms, thunder and lightning every day but Sunday.—G. J. Symons.

COVENT GARDEN MARKET.—June 21.

The weather of the past week has materially interfered with the foreign as well as home trade, interrupting the supplies, and checking the amount of business that would otherwise have been done. Importations from the Continent and Channel Islands comprise Grapes, Strawberries, Cherries, Apricots, Plums, and Figs. A second cargo of West Indian Pines is to hand in fair condition, fetching from 9*d.* to 2*s.* each. Heavy arrivals of Potatoes are reported both by rail and coastwise.

FRUIT.

	s.	d.		s.	d.		s.	d.		s.	d.
Apples	½ sieve	1	6 to	4	0	Mulberries	lb.	0	0 to	0	0
Apricots	doz.	2	0	3	0	Nectarines	doz.	10	0	20	0
Cherries	lb.	1	0	2	0	Oranges	℔ 100	6	0	10	0
Chestnuts	bushel	0	0	0	0	Peaches	doz.	12	0	24	0
Currants	½ sieve	0	0	0	0	Pears, kitchen	doz.	0	0	0	0
Black	do.	0	0	0	0	dessert	doz.	0	0	0	0
Figs	doz.	4	0	8	0	Pine Apples	lb.	6	0	10	0
Filberts	lb.	0	0	2	0	Plums	½ sieve	0	0	0	0
Cobs	lb.	2	0	2	6	Quinces	doz.	0	0	0	0
Gooseberries	quart	0	6	0	8	Raspberries	lb.	0	0	0	0
Grapes, Hothouse	lb.	3	0	8	0	Strawberries	lb.	0	6	3	0
Lemons	℔ 100	6	0	10	0	Walnuts	bushel	10	0	16	0
Melons	each	4	0	8	0	ditto	℔ 100	1	0	2	0

VEGETABLES.

	s.	d.		s.	d.		s.	d.		s.	d.
Artichokes	doz.	4	0 to	6	0	Leeks	bunch	0	4 to	0	6
Asparagus	℔ 100	4	0	8	0	Lettuce	doz.	0	8	1	0
Beans, Kidney	℔ 100	1	6	2	6	Mushrooms	pottle	1	0	2	6
Broad	bushel	0	0	0	0	Mustard & Cress	punnet	0	2	0	0
Beet, Red	doz.	2	0	3	0	Onions	bushel	6	0	8	0
Broccoli	bundle	0	0	0	0	pickling	quart	0	0	0	0
Brussels Sprouts	½ sieve	0	0	0	0	Parsley	sieve	8	0	6	0
Cabbage	doz.	1	0	2	0	Parsnips	doz.	0	9	1	0
Capsicums	℔ 100	0	0	0	0	Peas	quart	1	0	2	0
Carrots	bunch	0	6	1	0	Potatoes	bushel	2	0	4	0
Cauliflower	doz.	4	0	8	0	Kidney	do.	3	0	4	0
Celery	bundle	1	8	2	0	Radishes	doz. bunches	0	6	1	0
Coleworts	doz. bunches	3	0	8	0	Rhubarb	bundle	0	4	0	6
Cucumbers	each	0	6	1	0	Savoys	doz.	0	0	0	0
pickling	doz.	0	0	0	0	Sea-kale	basket	0	0	0	0
Endive	doz.	2	0	0	0	Shallots	lb.	0	0	0	0
Fennel	bunch	0	3	0	0	Spinach	bushel	2	6	0	0
Garlic	lb.	0	3	0	0	Tomatoes	doz.	2	0	3	0
Herbs	bunch	0	3	0	0	Turnips	bunch	0	0	1	0
Horseradish	bundle	3	0	6	0	Vegetable Marrows	doz.	0	0	0	0

POULTRY MARKET.—June 21.

Larger supply, and a fair but not increasing trade. Prices consequently lower.

	s.	d.		s.	d.		s.	d.		s.	d.
Large Fowls	3	0 to	3	0	Pigeons		0	0 to	0	10	
Smaller ditto	2	6	0	0	Rabbits		1	4	1	5	
Chickens	1	9	2	0	Wild ditto		0	9	0	10	
Ducklings	2	0	2	8	Hares		0	0	0	0	
Goslings	5	6	6	0	Guinea Fowl		0	0	0	0	
Pheasants	0	0	0	0	Grouse		0	0	0	0	

WEEKLY CALENDAR.

Day of Month	Day of Week.	JUNE 29—JULY 5, 1871.	Average Temperature near London. Day.	Night.	Mean.	Rain in 43 years. Days.	Sun Rises. m. h.	Sun Sets. m. h.	Moon Rises. m. h.	Moon Sets. m. h.	Moon's Age. Days.	Clock before Sun. m. s.	Day of Year.
29	Th		73.2	48.5	60.8	12	47 af 3	18 af 8	43 af 4	24 af 1	12	3 3	180
30	F	West of England Rose Show.	73.1	48.3	60.7	15	47 3	18 8	10 6	3 2	13	3 15	181
1	S		74.8	50.8	62.8	20	48 3	18 8	31 7	31 2	14	3 26	182
2	Sun	4 Sunday after Trinity.	73.4	51.2	62.3	17	49 3	17 8	40 8	20 8	○	3 38	183
3	M	Meeting of Entomological Society.	74 0	50.2	62.1	19	50 3	17 8	35 9	25 4	16	3 49	184
4	Tu	Length of Day 16h. 25m.	76.1	50.2	63.2	15	51 3	16 8	16 10	40 5	17	4 0	185
5	W	Royal Horticultural Society, Rose Show, [Fruit, Floral, and General Meeting.	77.1	50.2	63.7	17	52 3	16 8	46 10	2 7	18	4 11	186

From observations taken near London during forty-three years, the average day temperature of the week is 74.5°, and its night temperature 49.9°. The greatest heat was 97°, on the 5th, 1852; and the lowest cold 34°, on the 30th, 1863. The greatest fall of rain was 1.18 inch.

GARDEN PLANTS AT GIBRALTAR.

WITH questionable taste I dip my pen in ink, as my best endeavours as a descriptive writer will be feeble to pourtray the many native charms to be seen and met with on that beautiful spot, miscalled "the barren rock." In undertaking such a self-imposed task I sigh for "the pen of a ready writer" to unfold to the readers of the Journal in panoramic order the masses of subtropical vegetation to be met with in every cavern, nook, and dell of the far-famed rock. But, most unfortunately, the notes I made twelve years since, when wandering amidst the horticultural treasures there to be seen, have disappeared long since from my portfolio, and I now must trust to memory to give but a very indistinct description of the plants and trees there to be met with.

In the first place, it is quite needless on my part to point out the geographical position of Gibraltar on the map of Europe; suffice it to say that the rock juts out into the waters of the Straits in the shape of an oval, or nearly so, the inner or land end attached to Spain by an isthmus of about 800 yards in width, called "the neutral ground," or "north front." The southern point jutting out into the waters of the Straits is called "Europa Point." Being the southern point of the Continent of Europe, and distant from Africa about 10 or 12 miles, the fortress of Ceuta is plainly visible; and from Europa as a starting-point, let the reader bear patiently with me as I conduct him through the most interesting parts (to horticulture) that I can well remember.

On all sides of us, and above us on the heights, are to be seen Prickly Pears, Aloes in masses and in full bloom, the Cactus in crevices of the rock, wild Thyme, Marjoram, and Mint, with here and there a Scotch Fir tree, and very many trees of Quercus Suber, Cork tree; we may well ponder as to the date of planting, or have they been ever planted?

The historical student on this spot may look towards Africa, and say to himself, It was on this spot I stand upon, perhaps, that the Carthaginian general addressed his troops after their successful passage across the Straits, on their march to their premeditated conquest of Rome; or one might imagine to himself that he was, perhaps, standing on the ground held sacred by the great Moorish kings of Granada, where they often came at sunset to worship Allah and His prophet, and to cast a look of affection across the waters of the Straits on the land of their fathers.

Let us next descend towards the city. We pass through a cavern or opening in part of the rock, on the road from Europa point to Buena Vista (a good view), and we noticed in some English residents' gardens masses of subtropical plants, the Aloe and Cactus having the lead of all others in wild free growth; several very large Apricot trees loaded with fruit, also Pomegranate trees; and in the Hospital Square about one dozen beautiful Lemon and Orange trees, with some branches of the latter laden with ripe fruit, others green, a few branches only in blossom; and we noticed a few very good Palms in a situation called Rosia, and the Vine and Fig tree reigning predominant everywhere in wild unrestricted vegetation.

Let us next enter the Almeida, a public square or promenade, which is surrounded by trees peculiar to the soil and situation, and underneath these trees the sward consists chiefly of Mesembryanthemums with their starry-like flowers, so beauteous just after sunset; and close by the Convent, or Governor's residence, were very fine plants of Kalosanthes bedded out and in vases. On our way to the market we noticed a hedge of florists' Pelargoniums fencing-in a pleasure garden and tea house.

We then enter the market. The stalls are all well filled, and presided over by turbaned Moors, Jews, Spaniards, and Portuguese—a Babel of tongues. Grapes are abundant, but not a black Grape to be seen; donkeyloads of Melons, both Water and Sugar kinds; Cucumbers in heaps everywhere about; Oranges very fine at five for a penny; Lemons very large, and six a-penny; and Pumpkins of a tremendous size, but I forget the price. I paid for Grapes, I think, one penny per pound.

We next pass upwards towards the old Moorish castle, through what are called "the Lower Lines," and some native British Ferns are to be found. The following are a few which I noticed:—Asplenium Adiantum-nigrum, Asplenium Trichomanes, Ruta-muraria, Scolopendrium vulgare, and Ceterach officinarum; and some Castor-oil trees are growing wild about, with Aloes in bloom on all sides, the flower-stems from 10 to 20 feet in height.

Very high up the rock, on our way to the signal station, we passed a Plum orchard, of a couple of acres in extent, called the Farm. We at last mount the plateau on which the signal station stands, and what a glorious sight is spread to our view! North of us, and one would imagine underneath us, is San Roque, a town about four miles distant from the rock. Algesiras and Tariffa can also be seen, the latter place memorable during the Peninsular war; all the blue mountains of Andulusia resemble the billows of the Mediterranean; let us, then, look southward and westward, and the rugged mountains of Africa seem as if ready to plunge into the waters of the Straits, while overhead is the union-Jack, and what more appropriate pedestal than the rock could support that flag?—J. McD.

BROCCOLI.—No. 3.

When the plants have two or three leaves in addition to the seed leaves they should be pricked off about 3 inches apart in nursery beds in good, fine, but not very rich soil. The earlier this is done the more stiff and sturdy the plants will be, and the less liable they will be to run to stem; besides, some kinds when left to become tall and drawn in the seed bed are of very little good afterwards; in fact, it would be a saving in every way to throw them away rather than occupy ground with them. In pricking out, it is well to lift each plant with a stick, say the point of a stout label. In this way many of the fibres will be preserved, and shading, however bright the weather, may be dispensed with, but water should be given every evening in bright

weather until the plants recover. The plants having become stout, or about 6 inches high, or I will say they were sown at the close of April or beginning of May, they will be fit to prick out at the close of May or early in June; and in from three weeks to a month after that, or early in July, they will be in fine condition for planting out. It is equally prejudicial to allow the plants to become crowded when transplanted as it is in the seed bede; this crowding often renders the plants lanky, and such seldom stand a severe winter.

The situation for planting Broccoli should be open, for in shaded, and even sheltered, situations the plants are not nearly so hardy as in open positions. For the early kinds, however, sheltered situations are desirable, especially for varieties which come into use in December and January. For the spring and late kinds the situation cannot be too open.

The soil should be rich, but not from manure applied at the time of planting, for that only causes a succulent tender growth, the plants being more susceptible of injury from frost than those not stimulated by fresh manure. Fresh loamy soil is undoubtedly the best, as the plants are not so liable to suffer from the maggot producing club, finger and toe, or ambury, as in old rich garden soil. Fresh soil, or that which has been recently taken in, will be benefited by a dressing of old manure; for the ground having been trenched, and the surface soil placed at some depth, that brought to the surface is somewhat inert from want of exposure to the atmosphere, therefore a moderate dressing is useful in such a case to give the plants a start, whilst not stimulating them to make a very succulent tender growth. In such soils the plants may not grow so strongly, nor attain so large a size of head, but they are more hardy than those g owa in very rich soil, and have, as a rule, large heads for the size of the plants, and are very compact and of fine quality. Old garden soil it is well to trench, placing the surface soil at the bottom, and if the soil turned up be poor, as it will be if it has long lain without trenching, a moderate application of old manure may be given, and pointed-in with a fork. The trenching has been found one of the best known means of preventing the club or ambury. If the ground is rich omit the manuring, and give a good dressing of lime, a substance not so frequently used in gardens as it ought to be. It is not only beneficial as a manure, but is a capital safeguard against insect pests. Salt is also a good application, and has been found very useful against club or ambury. Soot is also an excellent manure with salt; and lime and soot in equal parts, with half a part of salt, by measure, form one of the best manures for the Cabbage tribe, the dressing being made broadcast after the ground has been dug; and before planting, after the dressing, the ground shou d be pointed over with a fork. Half a bushel per rod is a good dressing. It is an excellent dressing for old worn-out garden soils, and all three of its components are good insect-destroyers.

Broccoli should have plenty of room. Nothing is gained by crowding the plants, but very often everything is lost. A distance of 2 feet 6 inches is as near as the rows ought to be, except for such kinds as the Malta, 2 feet being sufficient for them. I prefer, however, to give all 2½ feet between the rows, and to have the plants 2 feet apart in the rows. This I consider ample, but not too much. Where each row is to be planted draw a rather wide drill, but shallow, as for sowing Peas, and if the weather is dry water the drills well to their full extent, and in about six hours afterwards they will be fit for planting. In planting, much is gained by taking up and planting with a trowel instead of a dibber. The latter method takes more time than pulling up and dibbling, but the plants receive comparatively little check.

After planting give a gentle watering, and the plants will not require any more unless the weather be unusually dry; then watering must be practised as required so as to insure the establishing of the plants. If the weather be moist the waterings will not, of course, be required, but it is not good practice to wait for rain falling; the plants when large enough for planting should be put out. As a rule, they should be planted out in the first fortnight of July. The ground between the rows and about the plants should be frequently stirred with a hoe, and the plants earthed-up as they advance, drawing the soil around the stems.

By October the plants will be at their best as regards growth, and early in that month I consider it advisable to lay them. The best plan is to take out the soil to the north of the end plant of the first row, taking out a few spits near to the stalk or stem, and forming a channel outwards for the stem to lie in. The spade is then placed in the ground about 6 inches from the stem, on the opposite side, and is pressed forward to the plants, whilst with the other hand the head is inclined to the north and brought to the ground, so that the stem rests in the channel. The soil from the next plant is placed over the stem, so as to cover it to the head, and the opening made by introducing the spade is closed. In this way the whole is done, plant after plant, and row after row. It is necessary to have a boy to hold the plants whilst the soil is being placed on the stems. It should be put down firm, so as to keep the plants in their proper position, the soil being gently pressed. Another plan is to take up the plants with balls, and lay them in with their heads inclined to the north, they being planted so near that the leaves touch, but not very closely. In laying-in, or planting, the whole of the stem is covered with soil, leaving nothing out but the leaves. This is also a good plan, but the heads are small—considerably smaller than those which are laid in where grown or without transplanting. As a rule, by the former plan the stems will be so long as to reach the ridge of the next row, so that they will have the neck somewhat raised, as it should be—the necks of the plants should be a few inches higher than the general level.

The laying-in should be done in good time, so that the plants may have time to form fresh roots before severe weather sets in, to effect which it is necessary to operate whilst there is heat in the ground. The laying-in giving a check to growth, tends to ripen the juices of the plant, and it is as a consequence more hardy. In all but very cold climates the laying-in may be done early in November. It is best practised in moist weather.

Another plan of affording protection is that of planting so as to leave an interval of about 4 feet between every two rows. The preferable plan, however, is to plant the first row with Cauliflowers, then to have two rows of Broccoli, the fourth row Cauliflowers, and every third row after that the same, the two rows between being of Broccoli. In this case the plants may be planted 2 feet apart every way, and every third row coming off before or by November, a space of 4 feet will be available between every two rows of Broccoli. The soil is taken from a trench 2 feet wide between these rows, and placed so as to cover the stems of the Broccoli; in fact, they are earthed-up in the same way as Celery. This being done, a check is given to growth by the cutting away of some of the fibres on one side; this tends to cause a concentration of the juices, whilst the earth protects the stems from injury by frost. It is considered desirable by some to give a dressing of salt after the earthing-up, applying it on a dry day; and that it may not enter the young tender hearts, it should be scattered sideways along the ridges, and so that it may not touch more than the old leaves, which it will not injure. The object of using the salt is to keep the plants from being frosted at the neck. The salt may be applied at the rate of ten bushels per acre. The whole may then, or before severe frost, be covered up with stable litter, covering the whole, and especially about the plants. In very severe weather mats, straw covers, or other materials, may be used for protection, to be left on as long as the frost continues, but when thoroughly thawed remove it, and likewise do so whenever the weather is mild. The manure will form an excellent dressing for the ground. It may be drawn into the spaces between the rows in March, and the intervals between the Broccoli may be sown with Peas that do not require a greater width between the rows than 6 feet, and between the Peas again, where the Broccoli stands, Celery may be grown.

When the heads are appearing it is well to turn the leaves over them, so as to prevent their being exposed to the weather. This may be done by half breaking through those leaves which can be turned over the head. The heads soon become of a yellow colour when exposed to the atmosphere, and are not only not white, a point of perfection in a good Broccoli, but are much coarser-flavoured.

The plants are sometimes attacked by caterpillars, for which there is no remedy so good as hand-picking, and dusting the leaves early in the morning whilst the dew is on them with quicklime or dry soot, both of which are good applications.

The Brassica aphis attacks Turnips and all the Cabbage tribe. Last year it did considerable mischief in the north, rendering whole fields of Turnips completely useless. It will not yield to soot or lime, nor even salt; the only effectual remedy is to syringe the plants, or water them overhead through a fine-rosed watering-pot, with tobacco water, adding

six gallons of water to one of the manufacturer's tobacco water.—G. Abbey.

THE ROYAL HORTICULTURAL SOCIETY'S EXHIBITION AT NOTTINGHAM.

June 27th.

"Nottingham ale, boys, Nottingham ale!
No liquor on earth is like Nottingham ale."

To test the truth of which assertion of the old ballad five Fellows of the Society sat in conclave at one of the Nottingham inns the evening previous to the Exhibition opening—five "Fellows" alike only in their devotion to gardening, as will be well apparent from their "notes and queries." One, such as Cæsar liked, "sleek-headed, and sleeping well o' nights," observed in a tone savouring of inquiry as much as of assertion, "The Society came here because it's close to the 'dukery;' the President 's one of the dukes." His neighbour, a thin tall "Fellow," like Shakespere's "culler of simples," added, "Ah! and townsmen came down liberally." The third "Fellow," a bit of a bookworm, said it was "appropriate too, for Charles the First first unfurled his standard here;" but the other "Fellows" granted at that, and No. 4 "hoped the Society would make a better fight than Charles did." All four seemed by one impulse to turn to the fifth "Fellow," as if he were likely to serve as an index of the Nottingham things worth seeing and knowing. In reply he was somewhat tedious, and we will record but a fragment or two of his antiquarian lore. "Each of us has drunk down to more than a peg of this 'Nottingham ale,' but I daresay you do not know how it came to be famous. One of my father's servants was a Nottingham woman, and she said that a relative who kept the 'Punch Bowl' in Peck Lane of this town brewed most seductive ale, and that his brother wrote thus—

"Ye doctors, who more execution have done
With bolus, and potion, and powder, and pill,
Than hangman with halter and soldier with gun,
Or miser with famine, or lawyer with quill;
To dispatch us the quicker you forbid us malt liquor,
Till our bodies grow thin and our faces look pale:
Observe them who pleases. What cures all diseases
Is a comforting dose of good Nottingham ale.
Nottingham ale, boys, Nottingham ale!
No liquor on earth is like Nottingham ale."

The "Nottingham ale" had done its work upon the fifth "Fellow," and he went on prosing about what "our Journal had said of George London helping to bring Princess Anne to Nottingham," and then about its market place, where, he said, "More than a century since the market gardeners stood in the Long Row up to Chapel Bar, and sold their Potatoes for 6*d.* per peck, and their Peas for 4*d.* Eggs then sold on an average of forty for 1*s.*, and fowls for 1*s.* 6*d.* per couple."

"Ah! you told about Charles unfurling his standard here. My great grandfather remembered that, and said the words on it, 'Give to Cæsar his due,' should have been 'Give to each his due.' It was stuck up where the Infirmary grounds now are."

"Nottingham potteryware was in much request a century and a half since, but one Wedgwood outdid it."

"Those bells you hear are at St. Peter's, and on one of them is this inscription—

'Our voices shall with joyful sound
Make hills and valleys echo round.'

And I hope the echo will be repeated by other chimes, and summon from far as well as near visitors to our Exhibition. Now, those bells remind me that Charles Deering lived, died, and was buried in the parish of St. Peter's. Ah! his house was by the side of that churchyard, and he was buried facing that house; but the house was pulled down to make way for Albert Street, and his gravestone with others used for pavement." [Can this be?—Eds.]

"Who was Charles Deering?" asked the "sleek-headed" Fellow.

"Who! Why, the man who wrote one of the first local Floras and the first local history in England."

We humbly confess that, like the "sleek-headed" Fellow, we had not a clear recollection of this noteworthy man of Nottingham, so we turned to a good printed authority, and find as follows:—

"Charles Deering was a native of Saxony. He took his degrees in physic at Leyden, and came to England first, in the train of a foreign ambassador. This happened about the year 1720. He practised physic and midwifery in London; and having a strong bias to the study of botany, became one of the members of the society established by Dr. Dillenius and Mr. Martyn, which subsisted from the year 1721 to 1726.

"In the year 1736 he removed to Nottingham, at the recommendation of Sir Hans Sloane. At this time he was married; but his wife did not long survive the removal to that place. He was at first well received, and is said to have been very successful in his treatment of the small-pox, which disease was highly epidemical at that place, soon after his settling there. He published 'An account of an improved method of treating the small-pox' in 1737, and to his honour be it remembered his regimen was the cool one, which at that time had been adopted by very few.

"Dr. Deering showed his attachment to his botanical pursuits by his assiduity in collecting such ample materials for his catalogue in less than two years after fixing at Nottingham. He published it in 1738 under the following title:—'A catalogue of plants naturally growing and commonly cultivated in divers parts of England, more especially about Nottingham.'

"The arrangement is alphabetical, and the number of plants about 850. The author was particularly attached to the subjects of the Cryptogamia class, in which his researches had been very successful. Of the number above mentioned, more than two hundred belonged to the orders of Fungi, Musci, and Algæ; among which, we meet with twenty-seven which he considered as nondescripts, and ten others not to be met with in the third edition of Ray's Synopsis. He was assisted in this branch by his correspondence with the learned professor at Oxford, who considered some of his discoveries as new, and speaks of his knowledge and assiduity in terms of applause. In Deering's posthumous work, the 'Nottinghamia Vetus et Nova,' there occurs a list of some plants discovered by the author after the publication of this catalogue. These are principally of the Cryptogamous kind.

"Notwithstanding his early success, that 'adverse fatality,' which he himself alludes to in his 'Letter on the small-pox,' still attended him. He was, unhappily, not endowed with that degree of prudence and equanimity of temper which are so necessary to the practice of physic, insomuch that he very early lost the little interest which his character and success had at first gained. Besides his acquaintance with the ancient languages, he was master of many of the modern tongues. His knowledge of botany was very considerable, and will be perpetuated so long as Dillenius's 'history' shall preserve estimation. He had a knowledge of designing, and was an ingenious mechanic. After his failure in physic, his friends attempted several schemes to alleviate his necessities. They procured him, among others, a commission in the regiment raised at Nottingham, on account of the rebellion; but this proved more honourable than profitable to him. He was afterwards employed in a way more agreeable to his genius and talents, being furnished with materials, and enabled by the assistance of John Plumtree, Esq., and others, to write the history of Nottingham, which he dedicated to the Duke of Newcastle. But he did not live to receive the reward of this labour. He had been troubled with the gout at a very early period, having been afflicted with it in his nineteenth year, and in the latter stage of his life he suffered long confinements in this disease, and became asthmatical. Being at length reduced to a degree of poverty, and dependance, which his spirit could not sustain, oppressed with calamity and complicated disease, he died April 12th, 1749. Two of his principal creditors administered to his effects, and buried him in St. Peter's churchyard, opposite the house in which he resided.

"He left an hortus siccus of the plants of his 'catalogue,' consisting of upwards of six hundred species, in eight volumes, of the quarto form, besides separate tables of the Mosses, and a volume of paintings of the Fungi, accurately done by his own hand. Some part, if not the whole, of this collection, was, I believe, purchased by the Honourable Rothwell Willoughby, who had been one of his benefactors while living, and inherited a portion of that taste which distinguished his family in the time of Mr. Ray. He left also a manuscript treatise, in Latin, 'De Re obstetricaria.'

"His posthumous work was published by his administrators, George Ayscough, printer, and Thomas Willington, druggist, under the following title:—'Nottinghamia Vetus et Nova, or, An Historical Account of the ancient and present State of the Town of Nottingham.'"

"Well," said the "sleek headed" Fellow, "that beats

'The little smith of Nottingham,
Who doth the work that no man can.'

Why, I've lived here more than all my life, for my father and mother lived here all theirs, and I never knew so much afore of that Deering. He's only just mentioned even in Allen's "Illustrated Handbook" of this town. However, this is what he does say about its botanists, and some things now worth seeing near it." Saying which, "Sleek-head" pulled a little red-covered book out of his pocket and read this—

"Few towns have been favoured with such able botanists as Nottingham. Among them may be mentioned John Ray, in whom we have a special interest on account of his friendly connection with the Willoughbys of Wollaton Hall. In the next generation Dr. Deering arranged the plants known in his time in alphabetical order, and added some useful remarks on their medicinal properties. Soon after, the Linnæan system was adopted, and Mr. Ordoyne tabulated the plants of the county in his 'Flora Nottinghamensis.' We then have Mr. Jowett, followed by Dr. Godfrey Howitt, who gave us a better list of

the plants of the county in his 'Nottinghamshire Flora.' William Valentine, with his superior microscopic knowledge, took up the Mosses; and that valuable work, the 'Muscologia Nottinghamensis' was commenced by Howitt and Valentine. Following Valentine was Mr. Cooper, who compiled a list of the plants of Sussex; he received a silver medal from the London Botanical Society. And last, but not least, was the late lamented Dr. Mitchel, a very dear friend of the writer. The plants of this Cemetery will not be so subject to change as those of the neighbourhood, where railways, drainage, and other extensive works, have so strangely altered the botanical fields."

"Sleek-head" then recommended his four "Fellows" to visit Highfield House, the fernery and observatory of which have been rendered celebrated by their favourably known owner, E. J. Lowe, Esq. He also recommended them to journey further, and revel among the Roses of the Rev. Reynolds Hole at Caunton Manor, near Newark, and he very truly observed that there is a vigour in the tree-life of Nottinghamshire which one looks for in vain round London; in its famed forest of Sherwood, which at one time formed part of a vast tract of forest land extending from Nottingham to York, there are Oaks which must have been old in the days when Robin Hood and his "merrie men" feasted unbidden guests on the king's deer, and tempest-torn and storm-beaten some of them yet remain, majestic even in their decay. There are Oaks younger, but still old—very old, that are clad in verdure on each returning spring, giving evidence by their hale, hearty old age of a well-spent youth, and which, if they escape the woodman's axe, will endure for centuries still. But though the limits of the ancient forest have been much circumscribed—and it is well in the interest of cultivation that it should be so—though it has been shorn of many of its ancient ornaments and much of its former pride, it yet covers a vast tract of land, and one may wander through its green glades for hours undisturbed by sight or sound of man. Out of it have arisen those great seats of gardening, Welbeck and Thoresby, and others of less extent, but of scarcely less note. That the natural conditions in which man is placed have a great influence on his mental and physical tendencies cannot be doubted, and it may be questioned whether the vigour of Nottinghamshire plant-life has not to some extent at least been a predisposing cause of that love of gardening which is so general in that shire. At the places we have named gardening is carried out on a princely scale, and by gardeners who by their energy, intelligence, and varied experience would command success anywhere; at others, as Wollaton, Berry Hill, Osberton, Worksop, and many more that could be enumerated, things are not carried out on so grand a scale, but the reputation of those entrusted with the management, and the excellence of their productions, are proofs that there also the gardening is of a high order. But there is another class who have no princely gardens, no stately hothouses with acres of glass and miles of piping, whose means are of the smallest, but whose love of the art is of the largest, and that class is the operatives of Nottingham itself. They, too, are great gardeners, and the productions of their gardens would often put to shame those from places of great pretensions. More fortunate than their London brethren they have gardens near their homes, and homes within an easy distance of their work; the London-dwelling man cannot have the one without sacrificing the other, and whichever alternative he accept each has its drawbacks. Railways and tramways are doing much to amend this state of things, but they will have to do much more before every man can have his rod, not rood, of ground. And how much of innocent pleasure, how great an aid that little space of earth is in resisting the temptations to which artisans (they call themselves "working men," but we are all *working* men, with brain, or hand, or both), are but too prone to yield, it would be difficult to overestimate. There is much of heroism in these humble gardeners—how they have denied themselves creature comforts, nay, even necessaries, for the sake of their favourites, their ardour in the contest, their joy in success, their patience under defeat—all these have been told in our columns, and, if we mistake not, by the Rev. S. Reynolds Hole, himself a Nottinghamshire man, and a very prince among Roses, in his most instructive and entertaining "Book about the Rose." There are bright spots in the working man's life—would that they were more frequent!—and there is, too, a large amount of shadow, but the balance of happiness in all conditions of life, between class and class, and between man and man, is pretty evenly held. The rich man may rejoice over his costly Orchids, his noble Palms, or his luscious fruits; but to the poor man the Geranium in his window, the Fuchsia at his door, or the stinted, diminutive, half-acid produce of his out-door Vine, gives as much happiness—as much pure happiness—to the household as all the most costly treasures of the hothouse. At the harvesting there is sunshine amidst the clouds that too often overshadow that little community; and the sunshine would be greater, the clouds fewer, were there more such harvestings in our land before the final harvesting when the wheat shall be separated from the chaff. But we are sermonising, and have landed *in nubibus*—but not elevated by Nottingham ale.

Nottingham, then, offered a great prospect of success for the first country show at which the Royal Horticultural Society had, it may almost be said, a separate existence. Horticulture and Agriculture—we name Horticulture first, as it is the elder—are twin sisters; but it is too often the case that while the one waxes the other wanes. It has been so with Horticulture. Wherever she has had to encounter her more powerful sister she and her pertainings have sunk into nothingness; and at Nottingham, where the first bold stand has been made, and where she has first assumed her legitimate position, she has been honoured as is her due, and we fear not she will stand in a better and prouder position hereafter. It was anticipated that His Royal Highness Prince Arthur would open the Show, and the Robin Hood Rifles, one of the best-drilled volunteer corps in the kingdom—if not the best—furnished a guard of honour which was not required, as His Royal Highness could not come. The Mayor of Nottingham performed that duty, being escorted from the Castle Lodge by the Council, officers of the Society, and Judges, and, arrived at the pavilion in the ground, he read the following address:—

Colonel Scott, my Lords and Gentlemen, Members of the Council of the Royal Horticultural Society,—It is my pleasure and privilege, as Mayor of the borough of Nottingham, to offer you, in the name of the inhabitants of this district, a hearty welcome on the occasion of your Exhibition in this Park. The peculiar nature of our manufactures has been the means of creating and fostering among our artisans a love of horticulture, as in its principal branch, periods of work, followed by corresponding periods of leisure, have furnished them with opportunities of cultivating this taste. The result has been that in the immediate neighbourhood of Nottingham more than ten thousand gardens of small size are held principally by the workmen of the borough and suburbs, who find during the cessation of their own duties a relaxation that is at once invigorating to the body and elevating to the mind. We trust that your meeting in Nottingham Park may strengthen and elevate this taste still further, and we hope that while the Society is benefited pecuniarily, we may gain a corresponding advantage by serving and trying to emulate the brilliant specimens of horticultural excellence which your Society's influence collects. I trust you will open an exhibition brilliant in its character and satisfactory to us all in its results.

Colonel Scott, the Secretary of the Royal Horticultural Society, replied as follows:—Worshipful Sir,—In the name of the Council and Fellows of the Royal Horticultural Society, I thank you most sincerely for the kind welcome you have given us to-day. You have received us, indeed, with such great honour that we cannot suppose that it is paid to us as individuals, but only because we represent, as the parent Society, all those numerous societies which have sprung up in this country, and which give so much delight and satisfaction to all engaged in gardening. When first the idea of holding country shows was mooted, we feared to make the attempt single-handed, and for the last four years we have supposed it unwise to separate ourselves from the Royal Agricultural Society; this year, however, we decided to adopt a bolder policy, and determined to do what we could of our own strength. Amongst the towns which invited us for this year the town of Nottingham stood foremost and I need not say that we did not hesitate one moment in accepting the offer Nottingham made to us. It is well known to all the world, that whatever Nottingham undertakes she carries out with vigour and determination. Whether it is in the manufactures or horticulture it is the same; and I may, perhaps, even venture to say, that in politics you show the same vigour. I believe that in horticultural matters some of your lambs become something like lions. I have noticed that among your allotment gardens, which are so well managed and make so much noise in the world, the chief man is a Knight of St. Ann's, and the best budder of Roses a General Jack. All these symptoms are indications of vigour, which, we thought, would lead to success if we came amongst you, and from what I have seen so far, I believe our success will be as great as the weather is glorious. I regret that the task of opening the Exhibition has not fallen into worthier hands. The Duke of Buccleuch, the President of our Society, is unfortunately prevented by military duties from being present; the Royal Prince who is connected with the Society, had received Her Majesty's commands to attend the State ball to-night; and Mr. Wilson Saunders, one of our most honoured members, and, as we consider him, the father of horticulture, is kept away on account of ill-health. I am quite certain, however, that although we have been disappointed in this respect, you will more than make up any deficiencies on our part. From the vigour and energy shown by Mr. Lowe in the position he holds as Local Secretary—[cheers]—and we are glad to be able to claim him also as one of

our Council—[hear, hear]—I am sure the Show must prove a success; and, therefore, Mr. Mayor, ladies and gentlemen, I feel great satisfaction in the name of His Grace the Duke of Buccleuch, the President, and in the name of the Royal Horticultural Society, in declaring that the Exhibition is now open.

And now of the Show thus opened under the most favourable auspices, and on one of the finest days we have hitherto had this cold summer. It is mainly held, at least the floral portion, in one vast tent covering more than half an acre of ground, and that ground has been admirably thrown into heights and hollows and gentle undulations by Mr. Gibson, of Hyde Park, much in the same style as that which he so successfully adopted at the International Horticultural Exhibition of 1866, and in this instance greatly favoured by the natural unevenness of the site. The plants are placed on turf-banks, which are vastly superior to the stiff formal stages, hidden in whatever manner they may be; and though the turf is not of the greenest, that has arisen from the sandy nature of the site and the grass being covered with canvas before the late rains. It is impossible to foresee the weather, but whatever the weather may be, of one thing we are satisfied—let it rain all the week as it poured yesterday morning, in half an hour after the rain has ceased the ground will be fit to walk upon. The fruit, and the cut flowers, and table decorations, are in two long tents at the higher part of the Park. A few words more before we plunge into details—the Nottingham people have made very liberal contributions in aid, the railways have been liberal, and we have not a fault to find with the arrangements. Some things might have been improved upon, but no one who has not to do with such affairs to which people come from north, south, east, and west, can have any idea of the difficulty of getting people "up to time." Great allowances must be made on such occasions, but on this few are required.

Stove and Greenhouse Plants are shown in considerable numbers, and, on the whole, are excellent for this period of the season. In Class 1, for twenty in 12-inch pots, Mrs. Cole & Sons, Withington, send a group, in which are excellent specimens of Aphelexis macrantha purpurea, A. humilis rosea, Hedaroma Hookeri, Ixora amboynensis, Dracophyllum gracile, four Heaths well grown and well bloomed, three others not so good, three Azaleas, and a very good specimen of Roella ciliata. Messrs. Jackson & Son, Kingston, have an excellent Pimelea mirabilis, Erica Massoni major, very good, E. mutabilis in fine bloom, but somewhat passed; Erica Cavendishii, good; Aphelexis macrantha purpurea, Erica tricolor speciosa and impressa, both of which, as well as a very good specimen of Anthurium Scherzerianum, were passed; Hedaroma Hookeri, Rhynchospermum jasminoides, a large Erica Shannoni, and Dipladenia amabilis in good condition; but the collection is marred by two poor, dingy, white Azaleas, and a ragged-looking Ixora crocata. Messrs. Jackson took the first prize, Mrs. Cole & Sons the second.

In the next class Mr. Baines, gardener to H. Micholls, Esq., Southgate, has a magnificent group, by far the finest of any exhibited. Not a plant but is in its best "form," the whole the perfection of freshness and models of culture. They consist of Dracophyllum gracile, 3½ feet in diameter; Hedaroma tulipiferum, a grand specimen; Dipladenia amabilis, splendid, and beautifully fresh; a large Cavendish Heath; Azalea Ardens, a mass of bloom and in marvellous condition; Phænocoma prolifera Burnesii, an Erica æmula 3 feet in diameter, Ixora coccinea, a mass of large and splendid heads of flowers; and Dipladenia splendens, very delicate in colour, blush tinged with pink at the edges, deepening in the throat. Mrs. E. Cole & Sons are second with Ixora salicifolia with splendid heads, Allamanda nobilis very fine, Dipladenia amabilis, excellent, Allamanda grandiflora, Erica Massoni major, E. venosa, Aphelexis macrantha purpurea, and two Azaleas. The third prize went to Messrs. Yates, Manchester.

In Class 3, for six, Mr. J. Bolton, gardener to W. Worswick, Esq., Birstall Hall, Leicester, has an excellent Rhynchospermum jasminoides, Clerodendron fallax, remarkably fine; a good Allamanda Hendersoni, and Imantophyllum miniatum. Mr. Stevenson, Lark Hill, Timperley, has Ixora coccinea with numerous fine heads of flowers; Azalea Apollo, excellent; Dipladenia amabilis, very fine; a good Anthurium Scherzerianum, and a large Clerodendron Balfourii, but scarcely showing any of the crimson corolla, but this will soon be very fine. In a collection from Mr. Mitchell, gardener to T. Cross, Esq., Ruddington Hall, Rhynchospermum jasminoides, a standard red Azalea, and Stephanotis floribunda are very good. The first of the local prizes for nine goes to Mr. Stevenson for a group in which there is a very fine Dipladenia amabilis, Ixora alba, 3½ feet across, and about the same in height, a grand mass of white heads of flower; Azalea Brilliant, excellent; Aphelexis macrantha purpurea, a large and fine specimen; Anthurinm Scherzerianum with sixteen spathes; Dipladenia acuminata in fine bloom, and a very good specimen of Bougainvillea glabra. The second prize went to Mr. Bolton, gardener to W. Worswick, Esq., Birstall Hall, for a collection containing the finest Clerodendron fallax we have seen for some time, and excellent plants of Erythrina crista-galli, Cassia corymbosa, Vinca oculata, Allamanda Schottii, Azalea Coronata, and a splendid plant of Lilium lancifolium roseum.

Single specimens of stove plants in flower, for which prizes are offered by G. E. Paget, Esq., Sutton Bonnington, come from Mr. Baines, who has a splendid plant of Ixora javanica, quite 4 feet high, and nearly 3 feet in diameter; from Mr. W. Peachey, gardener to H. E. Hole, Esq., Quorndon Lodge, Loughborough, who has Bougainvillea glabra, a fine mass of rosy bracts; from Mr. Stevenson, Lark Hill, Timperley, Dipladenia amabilis, with flowers very large and deep-coloured; from Mr. Woodfield, gardener to F. J. S. Foljambe, Esq., Osberton Hall, Stephanotis floribunda; and from Mr. G. Daniells, gardener to A. M. Mundy, Esq., Shipley Hall, Derby, a good Clerodendron Balfourii. Mr. Baines is first, Mr. Peachey second, Mr. Stevenson third, and Mr. Woodfield fourth, and an extra is given to Mr. Daniells. The finest single specimen greenhouse plant is Hedaroma tulipiferum, between 4 and 5 feet in diameter, perfectly trained, and the flowers lovely in colour; this comes from Mr. Baines. Mr. Smith, Nottingham, is third with a very fine Hydrangea; an Erythrina from Mr. Bolton is second. The best specimen of Anthurium Scherzerianum, for which special prizes were offered by Charles Paget, Esq., Ruddington Grange, is from Mr. Baines, and has twelve magnificent spathes, more coming, and is besides in fruit. Mr. Williams sent a plant with sixteen spathes, but of less size, and there is another with no name-card attached, with six fine spathes, and two others which would have been better away.

Fine-foliaged Plants.—Of these there is a very large and also very excellent display, in which there are many noble specimens in perfect condition. Mr. Baines is first with a splendid Croton pictum, Cordyline indivisa, very perfect; Dasylirion acrotrichum, Phœnicophorium sechellarum, and Verschaffeltia splendida, both magnificent specimens; Alocasia metallica, one of the finest we have seen, and two fine Crotons. Mr. Cruickshank, gardener to Lord Belper, Kingston Hall, is second for noble plants of Phœnicophorium sechellarum, Alocasia gigantea, Croton angustifolium, Chamærops gracilis, a fine Alsophila excelsa, Cibotium regale, Alocasia metallica, and Theophrasta imperialis, all in the most perfect health. The Alocasia is one of the best specimens we have seen. Third comes Mr. Woodfield with a very fine specimen of Sanchesia nobilis variegata, Sanseviera zeylanica, also fine and grand specimens, and an Anthurium regale in splendid condition. An extra prize goes to Mr. Thompson, gardener to T. Charlesworth, Esq., also to Mr. Bolton. In the nurserymen's class for nine Mr. Williams is first, showing a very fine Theophrasta, a grand Cycas revoluta, Dasylirion plumosum, Encephalartos latifrons, and a very fine Pandanus elegantissimus. Mr. E. P. Dixon, Beverley, is second with very fine plants of Gleichenia Mendeli, the variegated New Zealand Flax, Dasylirion glaucum, Croton angustifolium, Cyathea dealbata, and Theophrasta imperialis. Messrs. Bell & Thorpe are third with large and excellent plants of Bonapartea filamentosa, Musa vittata, Pandanus ornatus, and very good plants of Cordyline indivisa, Alocasia metallica, and others. Mr. Stevenson is fourth. Mr. Turner, Lenton, also sends a good collection.

The prize for the best specimen ornamental-foliaged plant went to Mr. Baines for a very fine specimen of Sarracenia flava upwards of 3 feet in diameter, with pitchers between between 2 and 3 feet high. The second is taken by Mr. Stevenson with a noble Alocasia. Third, is Mr. Woodfield with a large Anthurium magnificum. Fourth, comes Mr. Bolton with a Latania borbonica. A remarkably fine plant of Cissus discolor from Mr. Danielle received an extra prize.

Of specimen Crotons the best is Croton angustifolium, 5 feet high from the ground. This comes from Mr. Baines, is beautifully furnished with leaves, and finely coloured. Second comes Mr. Stevenson with C. variegatum; and third, Mr. Bolton with a very good C. angustifolium. An extra prize was awarded to Mr. Woodfield, gardener to F. J. Foljambe, Esq., for a large and very good C. longifolium.

Caladiums.—The best six come from H. Farmer, Esq., Lenton, and are good plants of Belleymei, Bicolor majus, Wightii, Cannaertii, Houletii, and Mirabile. The first of the special prizes offered by H. Clifton, Esq., goes to Messrs. Bell & Thorpe, of Stratford-on-Avon, for plants which though small are beautifully coloured.

Dracænas.—Mr. Williams is first with a fine plant of Dracæna lineata, D. umbraculifera, Cordyline indivisa, and Dracæna regina. Messrs. Bell & Thorpe, Stratford-on-Avon, are second with D. albicans, excelsa, Veitchii, and Guilfoylei. The third prize went to Mr. Lamb, Colston Bassett, for D. ferrea variegata in fine colour, Chelsoni and Guilfoylei and albicans, neither so good as those from Messrs. Bell & Thorpe.

Palms.—Of these Mr. Williams has six extremely noble examples, comprising Sabal Blackburniana, Phœnix sylvestris, Thrinax elegans, Latania borbonica, Areca lutescens, and Chamærops humilis. Messrs. Bell & Thorpe are second with very good specimens of Chamærops excelsa, Thrinax elegans, and Pritchardia Martii. Messrs. Yates are third, and Mr. W. E. Dixon fourth. Mr. Linden, of Brussels, sends the Palms he exhibited the previous week at Kensington.

Pitcher-plants.—The best three Pitcher-plants come from Mr Baines, who has Sarracenia flava, variolaris, and a variety of the first-named. Mr. Baines also sends a remarkable plant of Sarracenia purpurea, forming a mass of pitchers more than 3 feet in diameter.

Mixed groups arranged for effect are not remarkable either for the size or beauty of the plants. Messrs. Rollisson, of Tooting, have the first prize for a neatly arranged group, in which Ixora coc-

cinea, Brownea erecta, Pritchardia pacifica, Alocasias, and Adiantum farleyense are the most conspicuous. Messrs. Bell & Thorpe are second.

HARDY AND HALF-HARDY VARIEGATED AND ORNAMENTAL-FOLIAGED PLANTS.—Mr. Williams, of Holloway, is first with a fine collection, in which we noticed Dentzia gracilis variegata, Cupressus Lawsoniana pendula alba, Thujopsis dolabrata variegata, a fine plant of Yucca quadricolor, Euonymus japonicus aureo-variegatus, one of the best of the introductions from Japan; Euonymus albo-marginatus, another; Yucca aloifolia variegata, an excellent specimen and singularly clean; a fine Dracæna australis; and a handsome Yucca quadricolor, together with Euonymus radicans variegata, which is most useful as an edging to larger plants. The second prize was awarded to Mr. Dixon, Beverley, for a collection containing variegated Yuccas, variegated New Zealand Flax, Euonymuses, Aralia Sieboldi, &c. Messrs. Yates are third.

VARIEGATED ALPINE AND HERBACEOUS PLANTS.—Mr. Williams has a first prize for a very neat collection in which are the pretty and useful Polemonium cæruleum variegatum, Arabis albida aureo-variegata, Spiræa Ulmaria variegata, finely variegated with yellow; Alyssum saxatile variegatum, variegated Thyme, Sedum Sieboldii variegatum, and Pulmonaria officinalis maculata, the last handsomely blotched with white.

ORCHIDS.—Mr. Williams is first for nine, with a group in which there are a very fine Cypripedium barbatum superbum; Aërides crispum, with two ample branching spikes; Cypripedium caudatum, with a dozen of its long-tailed flowers, not so large as we have seen, but very good; Vanda tricolor formosa, and other good specimens. Messrs. Rollisson are second. In their collection Saccolabium Blumei majus, Aërides odoratum, and Aërides Lobbi, are good.

For six, Mr. Mitchell, gardener to Dr. Ainsworth, Broughton, is first with specimens not overlarge; second comes Mr. Stevenson, who has a good Dendrobium nobile, but not large-flowered, and two good pans of varieties of Cypripedium barbatum. The best nine are from Mr. Williams. In this group we noticed Aërides affine superbum very fine, with ten racemes, though these are not large; Cypripedium superbiens, remarkably fine; Saccolabium guttatum, good; Lælias, and Oncidium incurvum. Messrs. Brooke & Co., Manchester, are second. They have in their group a well-flowered specimen of Dendrobium Bensoniæ. Third comes Mr. W. E. Dixon, of Beverley, with an excellent pan of Cypripedium barbatum superbum, a good Saccolabium, and Aërides Dayanum.

HEATHS.—Of these there is a good though not a large show, and many of the plants are not up to the standard of the London exhibitions. In the class for nine, Messrs. Jackson & Son have large specimens of Erica tricolor coronata, Vernoni, Paxtoni, tricolor speciosa, depressa, tricolor dumosa, Aitonii, Turnbulli, and a nice specimen of Candolleana. The plants range from 3 to 4 feet in diameter, with two exceptions, and are admirably bloomed. Mrs. E. Cole & Sons have very good specimens, but rather rough, the best being ferruginea superba, gemmifera elegans, Massoni major, and venosa. Mr. Cooper, Rose Hill Nursery, Derby, sends a fine ventricosa grandiflora, and good plants of several others. Prizes were offered by C. Seely, Esq., M.P., Brookhill Hall, for the best single specimens. The first went to Mr. Baines for a plant of obbata fully 4 feet across, and fine as it is it will be yet finer. The second-prize specimen comes from Messrs. Jackson & Son, and is also excellent, the variety being the pink retorta major, upwards of 3 feet in diameter.

FUCHSIAS are but poor. In the amateurs' class for six the best come from Mr. R. C. Beard, Nottingham, Daniel Lambert, 8 feet high, is fine; third J. Mapplebeck, Esq.; fourth Mr. Thompson, gardener to T. Charlesworth, Esq. In the nurserymen's class Mr. Edwards, York, is first with good plants, varying from 3 to 6 feet in height, in excellent bloom.

CALCEOLARIAS.—Special prizes were offered for six by Sir E. S. Walker, the Hon. Arthur Strutt, and the Hon. Mrs. Hudson, but the specimens shown are unworthy of notice. The best come from Mr. E. Smith, Nottingham.

ACHIMENES.—For these prizes were given by the Local Committee, but the specimens were not remarkable. Mr. Bolton is first with freely-bloomed plants, but they are small.

GLOXINIAS.—Prizes were offered by Thomas Bayley, Esq., Lenton Abbey, and R. Birkin, Esq., Aspley Hall, for erect-flowering Gloxinias, and the first was awarded to beautifully-flowered unnamed varieties from Mr. Fellows, Beeston Fields, Nottingham. The best six pendant-flowering Gloxinias, for which prizes were given by Thomas Cross, Esq., Ruddington Hall, and Captain Parry, are exhibited by Mr. Bolton, gardener to W. Worswick, Esq., and are beautifully-flowered plants of seedling varieties, Bletso, Wilsoni, and Duke of Wellington.

LILIUM AURATUM.—Mr. Turner, of Slough, sends beautifully-flowered plants, each with at least a dozen large and very fine flowers. Messrs. Rollisson, of Tooting, are second with plants which, though fine, are inferior in the number and beauty of their blooms to those from Mr. Turner. Messrs. Yates are third, and Mr. Edwards, York, fourth, with good plants.

PYRETHRUMS.—But few are shown, the best come from Mr. Williams, of Holloway. Imbricatum plenum, Monsieur Barral, and Herman Stelzner, rose, and Impératrice Charlotte and Delicatum, white, are the best.

FERNS.—Of *Exotic Ferns*, in twelves, Mr. Shuttleworth exhibits grand specimens of Cyathea princeps, Cibotium Schiedei, the Bird's nest, Cyathea medullaris, Cibotium regale, Gleichenia dichotoma, very fine, and equally so G. speluncæ. Mr. Baines is second with a fine group, and Mr. Bolton is a good third. Mr. Williams is first for nine, with lovely specimens of Gleichenia speluncæ, Todea africana, Davallia bullata, and among larger plants, Cyathea dealbata and princeps. Mr. W. E. Dixon, Beverley, comes third; a fine Dicksonia antarctica, Todea superba, and Adiantum farleyense, being the most conspicuous. Messrs. Bell & Thorpe are fourth with a very good collection. The second-prize six in the amateurs' class come from Mr. Cooper, Derby, and comprise fine plants of Cibotium barometz, Alsophila australis, and Dicksonia antarctica. Mr. Stevenson, Lark Hill, is first with Gleichenia flabellata, between 5 and 6 feet in diameter, Gleichenia semivestita, also large, and in splendid condition, a large specimen of the lovely Leptopteris superba, and Acrophorus immersus. The second-prize six come from J. E. Mapplebeck, Esq., Woodfield, Moseley, Birmingham. Among them are a good Bird's-nest Fern, a fine plant of Nephrodium molle corymbiferum, and Dicksonia squarrosa, with a well-furnished head, or what we will term a stem 18 inches high. In Class 81 prizes were offered by H. Sherbrooke, Esq., Oxton Hall, for the best specimen Exotic Fern. Mr. Baines, with a beautiful Gleichenia rupestris fully 4½ feet in diameter, is first. The second prize went to Mr. Daniells, gardener to A. M. Mundy, Esq., Shipley Hall, Derby, for Gymnogramma calomelanos, nearly 4 feet in diameter, a handsome specimen; the third to Mr. Bolton, for a very good Alsophila excelsa; the fourth to H. Farmer, Esq., Lenton, for Lomaria gibba.

Prizes were offered by the Local Committee and the Rev. J. Wolley, Beeston, for six hardy exotic Ferns. The first was awarded to Messrs. Edwards, Nuthall, for a group in which were fine specimens, peculiarly beautiful, of Struthiopteris pennsylvanica, S. germanica, and Osmunda spectabilis. The second prize was taken by Mr. Shuttleworth, Leyland, near Preston, who had small but well-grown very healthy plants of Pteris scabernla and others, with a very good Cyrtomium falcatum. The first of the special prizes offered for three Platyceriums is taken by Mr. W. E. Dixon, of Beverley, who has a large plant of Platycerium grande and two smaller ones. Second comes Mr. Williams with P. alcicorne, and two plants of P. grande. Special prizes were offered for twelve Maiden-hair Ferns by Lord Belper. The first was taken by Mr. T. Shuttleworth, Golden Hill, with a collection in which are some excellent plants. Messrs. Bell and Thorpe sent a very good Adiantum Sanctæ-Catherinæ along with others. Sir Henry Bromley, Bart., offered prizes for specimen Maiden-hair Ferns. The first prize was awarded to Mr. T. Allsop, gardener to T. B. Reynardson, Esq., Holywell Hall, Stamford, for a large plant of farleyense, the second going to Adiantum tenerum, from Mr. Cruickshank, gardener to Lord Belper. Mr. Thompson, gardener to T. Charlesworth, Esq., Leicester, is third with A. tenerum. Mr. Peachey is fourth. Mr. Bolton sends a good plant of A. trapeziforme. The special prize offered by H. Cunliffe Shawe, Esq., Warsop Hall, for four Todeas or Hymenophyllums, was taken by Mr. Williams, of Holloway, with beautiful examples of the lovely Todea superba, Hymenophyllum demissum, very fine; Todea pellucida, and Trichomanes Lechenaultiana.

British Ferns.—The best collection of twenty comes from Mr. Mapplebeck, whose specimens are very excellent. They are all noteworthy, but the most so are Athyrium Filix-fœmina coronatum, Prichardii, frondosum, apuæforme, and polydactylon; Cystopteris fragilis sempervirens, extremely beautiful, A. F.-f. denisimum, Osmunda regalis cristata, Lastrea Filix-mas grandiceps, Allosorus crispus, and Polystichum angulare proliferum Wollastoni. The best twelve come from Mr. Thompson, gardener to T. Charlesworth, Esq. The best twelve come from Messrs. Edwards & Son, Northall, and among them are neat healthy plants of Athyrium F.-fœmina plumosum multifidum, Footii, multifidum, and Victoria; Polystichum angulare decurrens, multilobum, and cristatum, and Lastrea Filix-mas cristata. The second prize went to Messrs. Small & Son, Ilkeston, who had well-grown plants of Scolopendrium vulgare cristatum, Asplenium marinum, and others. For the best ten varieties not yet in commerce, Mr. J. E. Mapplebeck is first with Athyrium Filix-fœmina Gillsoniæ furcans, A. F.-f. Jonesii very pretty, A. F.-f. flabellifolium, A. F.-f. caput-Medusæ with very fine branching heads, A. F.-f. candigerum Stableri, Polystichum angulare acrocladon, and Scolopendrium perafero-cornutum. Mr. Thompson, gardener to T. Charlesworth, Esq., is second with a number of unnamed seedlings.

LYCOPODS.—Of these the show is somewhat limited. Mr. Bolton gardener to W. Worswick, Esq., is first with finely-grown pans of S. cordifolia, Martensii, and cæsia. Second comes Mr. Shuttleworth with an excellent pyramid of S. cæsia, and good examples of other kinds. Messrs. Bell & Thorpe are third.

SUCCULENTS.—For these prizes were offered by the Local Committee. The best come from Messrs. Veitch, and will be noticed hereafter. Messrs. Bell & Thorpe are second with a very nicely-grown collection. Mr. Williams, of Holloway, has a collection in which are Sempervivum tabuliforme, S. californicum, one of the most useful for edging purposes, S. Bollii, Echeveria sanguinea equally good, E. secunda glauca major, Gasterias, Agave potatorum and Verschaffelti, &c.

TREES AND SHRUBS.—Of hardy evergreens the only exhibitors are Messrs. Barron & Son, of Borrowash, whose reputation for such subjects renders it unnecessary to say that they took a first place. In

their best twelve are a very fine Golden Yew 11 feet high, beautifully coloured; Retinospora obtusa, fine; R. plumosa aurea, large and handsome with fine golden variegation; Arthrotaxus selaginoides, A. laxifolia, Cryptomeria elegans, Picea grandis, Araucaria imbricata, Retinospora lycopodioides, Juniperus excelsa stricta, forming a very handsome pyramid, and Biota elegantissima, a fine golden Arbor-Vitæ. Messrs. Barron also took the Local Committee's prize for the best collection.

New Plants.—The number of these are but limited, much more so than we expected, and of those that were shown the most are British Ferns, of which the name is legion. E. J. Lowe, Esq. has beautifully arranged groups, in which the following varieties received first-class certificates: Scolopendrium vulgare perfectum, virginale, omnilacerum cochleatum, tumulum, innocuum, Davii, kraspedon, Fellowsii, thaumaston, kephaloton, Smeei, omnilacerum Lowei, keratophoron, dichotomum, and præcinctum; Asplenium marinum Thompsoniæ, admirabile, and capitatum; Pleopeltis irroides cristata; Lastrea Filix-mas Belperii, depauperata Padleyii variegata; Athyrium, Filix-fœmina Gulsoniæ, Bellairsiæ, invincere, trossulum, Lowei, triumphale, Alexandræ secule, and Lawsonii; Lastrea dilatata calomelanos, L. d. spectabilis ramosa, Polystichum angulare transforme and ariprepes, Adiantum Capillus-Veneris admirabile, daphnites, and perfectum, and Hymenophyllum unilaterale Kinahani. J. E. Mapplebeck, Esq. had a similar award for Pteris aquilina incurva grandiceps, and cristata Gloveri, Lastrea Filix-mas revolvens, Athyrium Filix-fœmina rectangulare, dilatatum, caudiculatum, ceratophyllum, flabellifolium tenue, Gilsoniæ, Mapplebeckii, Craigii glomeratum, and Blechnum Spicant crispatum.

G. F. Wilson, Esq., sends several fine Lilies, of which he has a rich collection, and is a most successful cultivator. L. californicum, L. puberulum, L. penduliflorum very beautiful, and L. canadense flavum had first-class certificates. These flowers set off by the green of the Ferns in the niches of the rockwork near the fountain in the centre of the tent have an admirable effect, small as they are. Messrs. Veitch have first-class certificates for Begonia Chelsoni, Dieffenbachia Bauseii with very handsomely-marked foliage, for Dracæna Wisemannii, and Dracæna amabilis. Mr. B. S. Williams has a certificate of the same class for Trichomanes auriculatum, and Messrs. Fisher, Holmes, & Co. for the new golden variegated Thyme—to wit, Thymus citriodorus aureo-marginatus. Mr. Williams, of Holloway, sends a pretty Miltonia called Warscewiczii, the lip beautifully coloured, white and purpled crimson, also Pteris serrulata corymbifera handsomely crested. Messrs. Veitch are first for the special prize for six new plants with Paullinia thalictrifolia, a charming covering for a flat upright trellis; Dracæna amabilis, pretty; Todea Wilkesiana, very graceful; Dieffenbachia Bausei, Aralia Veitchii, and Croton Wisemannii. Messrs. Rollisson are second with Ixora Colei, Dieffenbachia Bowmanni, Davallia clavata, and others; Messrs. Yates third. Mr. Williams has Adiantum asarifolium and A. Capillus-Veneris, the latter very beautiful, with other good novelties noticed before. Messrs. Bell and Thorpe also exhibit Cochliostema Jacobianum, but not in flower, and other novelties.

Miscellaneous.—Foremost in the miscellaneous groups is that from Messrs. Veitch, occupying a conspicuous position near the central fountain on one side, and extending to the walk round the outside on the other. It would fill half a column at least to recite the mere names of the plants of which it is composed; it is the most perfect group as regards arrangement and as regards rarity and quality we have ever seen. The boxes of succulents are superb; the Sempervivums, as Bollii, arachnoideum, tabulæforme, &c., are admirable; and with these we have Pitcher-plants of various sizes and kinds, and one of the North-American Pitcher-plants, Darlingtonia californica, which we figure in another page, is in the finest possible condition, although it is a difficult plant to grow, but this is thoroughly well grown. Odontoglossum Alexandræ again is lovely, with six beautiful racemes. Maranta tubispatha, Trichopilia crispa, Adiantum concinnum latum, a lovely Fern, and many more, might be specially mentioned. This group received, as it well deserved, the first prize in the miscellaneous class. The second went to Mr. Williams, who has a great variety of Pitcher-plants, both American and Asiatic, Nepenthes Rafflesiana, being especially noticeable; Uropedium Lindeni, Aërides Larpentæ and other fine Orchids, including a plant of Saccolabium guttatum, with eleven spikes, and many more equally worthy of note. Messrs. Lane send some beautiful pyramidal Ivies; Mr. Peachey two pots of the Madagascar Lace Plant; Mr. Robson, gardener to Viscount Holmesdale, Linton Park, a fine collection of cones of Pinuses, &c.; and Messrs. Veitch a group of succulents like an exquisite piece of topiary work.

The show of florists' flowers is extensive and the quality good, but Roses are certainly not up to the mark. The cold weather had had probably something to do with this so far as the north is concerned. I went over my friend Mr. Hole's garden the evening before the Show, and I do not think that he had a dozen Roses in bloom; and as his garden is somewhat sheltered I may suppose that his was a pretty fair index of those in the neighbouring counties. But I should have thought that the southern growers would have come out more extensively, for the prizes are certainly liberal enough. I should have expected to see a much more vigorous competition for the cup presented by Mr. Hole, and for the prize for the premier Rose by Mr. Laxton.

In Class 46, for twenty-four Roses, the first was awarded to Mr. Laxton, of Stamford, for a stand containing nice blooms of Devoniensis, Maréchal Niel, Général Jacqueminot, Pierre Notting, Mdlle. Bonnaire, Marguerite de St. Amand, Madame Knerr, L'Enfant Trouvé, Le Pactole, &c.; and the second prize to the Rev. E. N. Pochin for a box containing some good and some very indifferent blooms, the best being François Lacharme, Gloire de Dijon, Duke of Wellington, Xavier Olibo, Horace Vernet, Senateur Vaisse, and La France.

In the class for twenty-four cut Roses, three trusses of each, the only exhibitors are Messrs. Paul & Son, of Cheshunt, who have fine blooms of Marie Baumann, Marquise de Mortemart, Dupuy Jamain, Camille Bernardin, Miss Ingram, Duke of Edinburgh, Centifolia rosea, Xavier Olibo, Souvenir d'un Ami, Baroness Rothschild, Nardy Frères, Abel Grand, La France, Dr. Andry, Modèle de Perfection, and Madame Charles Wood.

In the class for twelve the first prize was awarded to Mr. Johnson, of Pear Hill Rise, Nottingham, for Elie Morel, Madame Charles Wood, La France, Charles Lefebvre, Jean Goujon, Maréchal Niel, Horace Vernet, Duc de Rohan, and Princess Mary of Cambridge. The second to the Rev. E. N. Pochin; and the third to Mr. Thomas Green, Parliament Street, Nottingham.

In the class for six the first prize was awarded to Mr. Timson, Nottingham, for Charles Lefebvre, Mons. Noman, Comtesse de Chabrillant, Lord Macaulay, Duc de Wellington, and John Hopper; the second to Mr. Wise, Newcastle Street, Nottingham, for Horace Vernet, Dr. Andry, Olivier Delhomme, La France, Marquise de Mortemart, and Charles Lefebvre; the third to Mr. Hoe, Corporation Road, Nottingham.

For the cup presented by the Rev. S. Reynolds Hole there were six entries. It was awarded to Messrs. Paul & Son, Cheshunt, for fine blooms of Dr. Andry, Lafontaine, Maurice Bernardin, Centifolia rosea, Leopold Hausburg, Duke of Edinburgh, La France, Joseph Fiala, Camille Bernardin, Miss Ingram, Marie Baumann, and Nardy Frères. The second prize went to one without a name; and the third to Mr. Edwards, of York.

In the class for forty-eight Roses the first prize was again awarded to Messrs. Paul & Son for Black Prince, President Willermoz, Centifolia rosea, Charles Lefebvre, Dr. Andry, Souvenir d'un Ami, Felix Genero, Madame Rivers, Marie Rady, La Reine, Mr. George Paul, Abel Grand, Souvenir d'un Elise, &c. Mr. Merryweather, of Southwell, was second, and Mr. Edwards, of York, third.

In the class of twelve, offered to amateurs, the first prize was awarded to Mr. H. Grandy for some nice blooms of Gloire de Santenay, François Lacharme, Camille Bernardin, Marquise de Mortemart, La France, &c. This was the best box of twelve in the Show in my opinion, and might have run very closely for the cup.

In the premier prize for a premier Rose the first prize was awarded to Messrs. Paul & Son for Duke of Edinburgh, the second to Mr. G. Burnham for Marquise de Mortemart, and the third to Mr. J. Brown for President (Tea).

In the class for nine Show Pelargoniums Mr. Edwards, of York, has large plants of Charles Turner, Pericles, Lord Clyde, Mary Hoyle, Virginie, Clarissa, Beacon, Royal Albert, and Desdemona. Mr. Turner, of Slough, has nice plants of Congress, Example, Lady of the Lake, Nabob, Emperor, Magnificent, Sunshine, Regent, and Eldorado, and comes second. To most people his plants, from their quality of bloom and neatness of growth, would have been the most taking.

In Class 14 there is but one entry of indifferent plants, not sufficiently bloomed.

In Class 15, for Fancies, there is only one entry, consisting of good plants of Marginata, Matilda, Evening Star, Mr. Page, and Mr. Horner. In Fancies for nurserymen Mr. Edwards, of York, is again first, his lot consisting of Juliet, Madame J. Dolby, Tormentor, Brightness, Zoe, and Ann Page.

In the Zonal Pelargonium class there are some really well-grown plants, though some are long and leggy, and some of them have really no bloom on them. This especially refers to Class 17, exhibited by amateurs, for in Class 18, exhibited by nurserymen, Messrs. Bell and Thorpe, of Stratford-on-Avon, have fine plants of John Thorpe, Queen of Beauties, Lord Derby, Mrs. Wm. Paul, Indian Yellow, and Fairy Princess. The second was awarded to Mr. Edwards, of York, for Mrs. Wm. Paul, Shirley Hibbert, Alphonso, Clipper, Enchantress, and Glow.

In the class for six doubles Messrs. Bell & Thorpe take first for nice plants of Marie Lemoine, Wilhelm Pfitzer, Madame Lemoine, Victor Lemoine, and Miss Evelyn, rosy pink seedling; second comes Mr. Perkins, Leamington, for Marie Lemoine, Wilhelm Pfitzer, Madame Lemoine, Capitaine l'Hermitte, Madame Radolf Abel, and Madame Michel Bachner.

In Variegated Pelargoniums, which are poor, the first prize was awarded to Mr. Charles Turner for Mrs. Turner, Impératrice Eugénie, Mr. Rutter, Italia Unita, and Mrs. Rousby; the second to Mr. Frisby, gardener to H. Chaplin, Esq., Blankney Hall, Sleaford, for small plants of Magnet, Miss H. Bouvier, Reine des Beautés, Lady Folkestone, Hermit, Lizzie Frisby.

In the class for the best six new Tricolors Mr. Turner was again first with Miss Morris, Miss Rutter, Mrs. Rousby, Mr. Rutter, Baroness Burdett Coutts, and Mr. Brooke Bridges.

For the best single Golden Tricolor Mr. Turner was first with Baroness Burdett Coutts, and for the best single Silver Tricolor Mr. Turner was also first with Mrs. Rousby.

For the best six Variegated Mr. J. E. Mapplebeck was first with Oriane, Miss Kingsbury, Flower of Spring, Stella variegata, Silver Star, and Queen of Queens; second, Messrs. Bell & Thorpe for Flower of Spring, Duke of Edinburgh, Nosegay variegated, Stella variegata, and Mrs. C. J. Perry.

First-class certificates were awarded to Show Pelargoniums—Pompey, a fine dark orange crimson flower; Cæsar, a flower of the same colour, but of a deeper shade; Achievement, a rosy lilac flower of peculiar shade; Charming, a flower in the way of Mary Hoyle; Trobadour, and Zephyr, a deep-coloured flower with dark spot on the lower petals.

In Table Decorations there are some very nice and some very indifferent stands exhibited. I should have just reversed the first and second prizes; for although the first was probably more tastefully arranged, yet as it has the effect of hiding the persons at the opposite side of the table, it is fatal to its position as first. It is exhibited by Mr. W. Cruickshank, gardener to Lord Belper, and consists of modifications of the March stand, arranged with fruit in the lower basin, and with flowers and foliage in the upper portion. The second is to my mind the best, being arranged lightly and elegantly; one stand having hanging glass baskets, and the other glass cornucopiæ reversed. The flowers consist of Geraniums, Spiræas, Roses, Pinks, and Fuchsias, and there is but little fruit; the first-prize having a considerable quantity of good well-developed fruit. There is one very elaborate plateau, which is evidently overdone.

In Hand Bouquets there is a very large and good competition, some of them being exceedingly pretty; the first prize in Class 129 being awarded to Mr. F. Perkins, the second to Mr. House, Peterborough, the third to Mr. Wotton, The Hall, Wirksworth, Derby. In Class 130, for gentlemen's bouquets, the first was awarded to Mr. House for a bouquet, containing a piece of Heath, Bouvardia, and Maiden-hair Fern; the second to Mr. Farmer, Flora Cottage, Lenton, for one containing ten Fuchsia blooms, a piece of Heath, and frond of Maiden-hair.

In Pinks there are nine stands of nice clear flowers. The first prize was awarded to Mr. Turner for the Rev. G. Jeans, Marion, Christabel, seedling, President, Dr. Maclean, Prince Frederick William, Eustace, Delicata, Attraction, Bertram, and Lord Kirkcaldy; the second prize being taken by Mr. Pizzey, gardener to Sir E. Perry, with Bertram, Attraction, Diadem, Rev. G. Jeans, Marion, Lord Herbert, Victory, President, Governor, Prince Frederick William, Delicata, and Cristabel; the third is Mr. Taylor, of Sneinton, and the fourth to Mr. Gibson, of Framcote.

Messrs. Downie, Laird, & Laing exhibit two stands of beautiful Pansies, one of Show and one of Fancy Pansies, the former consisting of J. B. Downie, Imperial Prince, Defoe, Jessie Laird, Prince of Prussia, J. C. Chapman, Chancellor, G. Keith, Adonis, Eclat, J. H. Douglas, Lavinia, Locomotive, Cherub, Mary Lamb, Robert Burns, Village Maid, Yellow Queen, Lima, George Muirhead, Snowdrop, Dora, Princess of Wales, J. White, Miss Williamson, Allan Ramsay, Lady L. Dondas, A. H. Mearns, Alice Downie, Raine Pladda, and some seedlings. Of Fancies they have Daisy, Mr. Baird, James Alexander, Miss Bonomy, Mrs. McLauchlin, Princess of Wales, Miss Melville, Dr. Mitchell, Dr. Syme, Mr. Lightbody, Agnes Laing, Magnificent, Mr. Hay, and some seedlings.—D., *Deal.*

FRUIT.

There is a fair display of fruit, though the quantity is not large, nor the quality on the whole very excellent. To this generalisation there are, however, exceptions.

A collection of twelve dishes comes from Mr. Miles, gardener to Lord Carrington, and consists of fine bunches of Black Hamburgh Grapes, but not well coloured; excellent bunches of Foster's White Seedling, very fine; Violette Hâtive Peaches, Murray Nectarine, Bigarreau Napoleon, and Black Tartarian Cherries, and Sir Charles Napier and Mr. Radclyffe Strawberries, the latter very fine. The prizes offered by Col. Wright and C. Wilde, Esq., are taken, the first by Mr. Mitchell with Muscat Grapes, good Peaches, Nectarines, a Melon, British Queen and Lord Burghley Apple in such perfect preservation that it looks as if it had just been gathered, though, of course, last year's fruit. The second prize goes to Mr. Holah for fine bunches of Canon Hall Muscat, but not ripe; Golden Hamburgh, a Melon, small Cherries, Nectarines, and Figs.

Pine Apples.—These are but sparingly shown, but they are of great merit. Mr. Miles, gardener to Lord Carrington, Wycombe Abbey, is first for three, with two splendid Queens weighing respectively 5 lbs. 5 ozs., and 5 lbs. 13 ozs., and a noble Providence of 11 lbs. 5 ozs. Mr. Simpson, gardener to Lord Wharncliffe, Wortley Hall, is second with three Queens of 4 lbs. 8 ozs., 5 lbs. 2 ozs., and 4 lbs. 12 ozs., perfectly ripened. For a single fruit, Mr. Simpson is first with one of 4 lbs. 6 ozs.; and Mr. Miles second with one weighing 5 lbs. 14 ozs., but not yet perfectly ripe.

Grapes are less numerously shown than one would have supposed. In single dishes of Black Grapes Mr. Ianson, gardener to T. Statter, Esq., Stand Hall, Manchester, is first with fine bunches of Black Hamburghs, even in berry and perfect in colour and bloom. These, it is stated, were grown on single rods. Mr. M. Henderson, gardener to Sir G. H. Beaumont, Bart., Cole Orton Hall, is second with fine bunches of the same, very large in berry. Mr. Sage, gardener to Earl Brownlow, Ashridge, is third with large bunches somewhat loose and rubbed in the carriage. Mr. Daniells, gardener to A. M. Mondy, Esq. Shipley Hall, also sends good-sized bunches. For White Grapes Mr. Holah, gardener to H. Saville, Esq., Rufford Abbey, is first with large bunches of Muscat of Alexandria, but not ripe. Mr. Peachey is second with Golden Champion with very large bunches and immense berries. Mr. M. Henderson is third with Buckland Sweetwater. The best 12-lb. basket comes from Mr. J. Smith, gardener to the Earl of Gainsborough, and consists of large bunches of Black Hamburgh. The same kind from Mr. M. Henderson is second; and Black Hamburgh not perfectly coloured from Mr. Broadbridge, gardener to Sir C. Mordaunt, Bart., Walton Hall, is third. Prizes were offered by Mr. T. Forman for six bunches from Vines more than twenty-five years old. The first prize was awarded to Mr. Ianson for large splendidly ripened bunches of Black Hamburgh cut from Vines upwards of twenty-seven years old, the largest bunch being from a rod of last year's growth. Mr. M. Henderson, Cole Orton, is second with good bunches of Black Hamburgh, very even in size of bunch and berry, and very finely coloured. The Vines are stated to be thirty-nine years old, and grown on the extension system. Mr. Lynn, gardener to Lord Boston, is third with very large and excellent bunches of Black Prince, Buckland Sweetwater, very fine, and General de la Marmora. Mr. Simpson, Wortley, sends excellent bunches of Black Hamburgh, large in berry and most of them well coloured, from Vines fifty years old, restricted to one rafter and pruned to the best bud. Mr. Craddock, gardener to Lord Willoughby de Broke, Compton Verney, exhibits in this class large bunches of Muscat of Alexandria, but unripe. The first of the local prizes for two bunches of four varieties is taken by Mr. Broadbridge with Black Hamburgh, Canon Hall Muscat, Buckland Sweetwater, and Golden Champion, all of which are fine, and the bunches of Golden Champion are very large. Mr. Cruickshank, Derby, is second with Frankenthal, Muscat of Alexandria, small but finely ripened, Black Hamburgh, and White Frontignan.

Peaches and Nectarines are few, but very fine. The best of the former come from Mr. Jack, gardener to the Duke of Cleveland, Battle Abbey, the kind being Bellegarde very large, and beautiful in colour. Mr. Sage is second also with very large and finely-ripened fruit; and Mr. Lamb, Colston Bassett, is third with Galande. Mr. Lynn, gardener to Lord Boston, Hedsor, sends excellent fruit of Royal George, and Mr. Miles, Violette Hâtive. In Nectarines, Mr. Hope, gardener to T. C. Clarke, Esq., Vinery House, Allerton, is first with large fruit of Elruge. Violette Hâtive, very highly coloured, from Mr. Lynn is second; and the same kind from Mr. Brown, gardener to Earl Howe, Gopsal, is third. Pitmaston Orange comes from Mr. Jackson, Fiscall Hall, Stafford. Mr. Miles sends good fruit of Violette Hâtive. The local prizes for four Peaches and Nectarines go to Mr. Jackson, Fiscall Hall, Stafford, for very fine fruit of Grosse Mignonne and Newington Peaches, and of Pitmaston Orange and Elruge Nectarines. The second was awarded to Mr. Miller.

Figs only number half a dozen dishes. Brown Turkey from Mr. Brown, Gopsall, is first, and the same kind from Mr. Sage and Mr. Miller, Worksop, is second and third.

Cherries.—Only eight dishes are shown. The first prize goes to Mr. Miller for very fine Black Tartarian, Mr. Miles is second with Bigarreau Napoleon; and Mr. Garland, gardener to Sir T. D. Ackland, Bart., Killerton, is third with Elton.

Strawberries.—There is only one collection of six dishes, and that is shown by Mr. Miles; it consists of good fruit of Black Prince, Mr. Radclyffe, Sir Charles Napier, Alice Maude, Léon de St. Lannier, and Sir Joseph Paxton. In single dishes Mr. Staples, gardener to Capt. Pochin, Braunstone Hall, Leicester, is first with a fine dish of Sir Joseph Paxton; Mr. Miles is second; and Mr. Mitchell, gardener to T. Cross, Esq., Ruddington Hall, third.

Melons.—In the green-fleshed class Mr. Lamb, Colston Bassett, is first with Colston Bassett Seedling; Mr. Mitchell second with another seedling; and Mr. Shuttleworth third with Gilbert's Improved Victory of Bath. For scarlet-fleshed, Mr. Gilbert, gardener to the Marquis of Exeter, Burghley, is first with a good-sized fruit of Gem; Mr. Meikle, gardener to S. Howard, Esq., Read Hall, Whalley, is second with Gem; and Mr. Mitchell third with the same kind. The first prize for two Melons was awarded to Mr. Mitchell for Gem and Golden Perfection; the second to Mr. Holah for two scarlet-fleshed seedlings.

Fruit Trees in Pots.—With the exception of Vines, these are furnished by Mr. Pearson, of Chilwell, and by him only. No better exponent by precept and example could be found; and though he took first prizes both for six Peaches and Nectarines, and for six orchard-house trees, excluding these and Grapes, the honour was no more than deserved. He has admirable standards of Royal George and Early Silver Peaches, Pitmaston Pine Apple, and Victoria Nectarines, loaded with fruit and in superb health; whilst among orchard-house trees his Figs, Pears, and Plums are admirable. Messrs. Lane & Son are the only exhibitors of Vines in pots, and have Foster's White Seedling admirably fruited, Madresfield Court also very good, and Black Hamburgh.

Miscellaneous.—Mr. Frisby, gardener to H. Chaplin, Esq., Blxholm Hall, has a first prize for three dishes of Apples in very good preservation, the varieties being Court-Pendû-Plat, Easter Pippin, and Sturmer Pippin. Mr. Garland, gardener to Sir T. D. Ackland, Killerton, has Red and Black Currants, and Raspberries; and Mr. Tillery, Welbeck, sends, not for competition, Strawberries, Cherries, and Lady Downes' Grapes of 1870 preserved in bottles,

and though shrivelled, still good. Mr. Miles, gardener to Lord Carrington, has an Enville Pine of 8¾ lbs. and a large-crowned Providence of 10¼ lbs. Neither of these is fully ripe, still they are noble fruit.

Pods of Vanilla planifolia, the Vanilla of commerce, come from Mr. Woodfield, gardener to F. S. Foljambe, Esq., Osberton, whence these have been several times exhibited by Mr. Woodfield's predecessor, Mr. Bennett.

Vegetables and the garden structures we must leave till next week The former are, for the most part, excellent.

ENTOMOLOGICAL SOCIETY'S MEETING.

The June meeting was held at Burlington House under the presidency of J. W. Dunning, Esq., M.A., F.L.S., Vice-President, and formerly Secretary of the Society, in the absence of the President. A communication was read from the Rev. Leonard Jenyns with reference to the reported showers of insects or other small animals at and in the vicinity of Bath, of which strange accounts had recently appeared in the local journals, and respecting which, at the previous meeting of the Society, it had been suggested that they might probably prove to be the Entomostracous crustacean, Branchipus stagnalis. Mr. Jenyns having carefully examined some of these animals, found, however, that they were infusorial, probably Vibrio undula of Müller, many of them being congregated into spherical masses, enveloped in a gelatinous substance. They fell during a severe storm of rain, having probably been taken up into the rain cloud by a whirlwind.

At the May meeting of the Society a curious specimen of the common Brimstone Butterfly was exhibited, which had been captured, with large irregular patches of brilliant red upon the wings, and which it was suggested had been produced by the insect having come into contact with some chemical liquid, which had produced the discoloration. At the June meeting Mr. Butler gave an account of some experiments which had been made by himself and Mr. Meldola, with the view of ascertaining the action of dyes on insects. Many species had been subjected to aniline dyes, and all kinds of colours produced. Mr. Butler also found that when Butterflies were immersed in a solution of soda, for the purpose of causing the dyes to be taken more readily, the colouring matter of the scales was completely discharged and collected at the bottom of the solution. Mr. Bicknell, acting upon a suggestion made at the May meeting, had also subjected the common Brimstone Butterfly to the action of cyanide of potassium, and the yellow colour of the insect's wings was changed to orange red.

Mr. Boyd exhibited a specimen of the yellow moth, Rumia crataegata, one wing of which was turned brown at the apical portion, having been captured in that condition.

THE CRYSTAL PALACE ROSE SHOW.

This was held on Midsummer-day, and though the sun shone forth rather brightly about noon, the rest of the day was as cold as one of the early days of March, for the north-east wind, of which we have had so much this year, and now want so little, had again set in; but the dull, ungenial weather did not deter a large concourse of visitors from flocking to the Palace, and when the barriers were removed that kept them back while the judging was going on, the pent-up multitude were soon four-deep round the tables. The backwardness of the season, and the heavy storms of rain and hail, no doubt prevented many exhibitors from entering the lists, and the Show, consequently, was not so large as it usually is; and for the same reasons also the Roses generally were neither so large, nor so bright in colour, nor so perfect in form as they usually are at this Show. In many instances the storms had done their work on the largest and best blooms, and younger ones, not then expanded, had to take their places. In spite, however, of all drawbacks, Messrs. Paul & Son and Mr. Keynes, of Salisbury, among nurserymen, exhibited excellent trusses, but by far the finest shown were from the Rev. R. N. G. Baker, of Heavitree, Devon, who made a clean sweep of the first prizes in all the amateurs' classes in which he could exhibit, and that in competition with such well-known exhibitors as Mr. Ingle and Mr. Chard.

In Class 1, seventy-two single trusses, Messrs. Paul & Son, of Cheshunt, were first with excellent examples of La France, Anna Alexieff, Duke of Edinburgh, Exposition de Brie, a little weather-beaten, as the same variety nearly everywhere was, Alba rosea, Devoniensis, Xavier Olibo, Mr. Gladstone (new), Paul Verdier, Abel Grand, Dupuy-Jamin, Centifolia rosea, Général Jacquemiuot, Madame Clémence Joigneaux, Leopold Hausburg, Madame Victor Verdier, Marie Baumann, Triomphe de Caen, John Hopper, Marguerite de St. Amand, Elie Morel, and Rubens. Next came Mr. Keynes with La France, Elie Morel, Prince Camille de Rohan, Exposition de Brie, Comtesse d'Oxford or Countess of Oxford (often written *Comtesse of* Oxford!), Victor Verdier, Abel Grand, Marguerite de St. Amand, Alfred Colomb, Gloire de Vitry, Ville de Lyon, La Motte Sanguine, bright carmine; Marquise de Castellane, bright rose, fine; Maréchal Niel, Senateur Vaisse, and Dupuy-Jamin. The third prize went to Mr. Mitchell, Piltdown, who, in addition to several of the varieties already named, had fine trusses of Baronne Haussman, Louis Van Houtte, Joséphine Malton, Ferdinand de Lesseps, and Gloire de Ducher. The fourth prize was awarded to Messrs. Francis & Co., Hertford.

Class 2, forty-eight triples, is always very effective from the masses of colour which are presented, and it was so in this instance. Here Mr. Keynes took the place of honour, having among others fine trusses of Marechal Niel, Alfred Colomb, Marquise de Castellane, La France, Marquise de Mortemart, Louise Peyronny, John Hopper, Ferdinand de Lesseps, Marie Baumann, Devoniensis, Madame Fillion, Edouard Morren, Elie Morel, Triomphe de Rennes, and La Motte Sanguine. Messrs. Paul & Son came second with Général Jacquemiuot, Maurice Bernardin, Mdlle. Thérèse Levet, Charles Rouillard, Lafontaine, Mr. Gladstone, Centifolia rosea, Camille Bernardin, and good examples of others. The third prize went to Mr. Turner, of Slough, who had Lord Napier, new, and very fine in colour, being a brilliant carmine; Miss Ingram, Miss Poole, also new; Monsieur Woolfield, Céline Forestier, and Baronne de Rothschild. Mr. Mitchell was fourth.

For twenty-four triples Mr. Keynes was again first, the most noteworthy being Marguerite de St. Amand, Abel Grand, Charles Wood, John Hopper, Marquise de Castellane, La France, and Madame Willermoz. Messrs. Paul & Son were second, and Mr. Turner third. For twenty-four singles Mr. Walker, Thame; Mr. Cooling, Bath; and Mr. Knight, Hailsham, were prizetakers in the order named. Messrs. Laue, of St. Mary's Cray; Coppin, of Shirley; Lowe, of Uxbridge; Woollett, Uxbridge; and Parker, Rugby, also exhibited.

In the amateurs' classes, as already remarked were to be found the finest Roses in the Show, although several well-known names did not appear in the list of exhibitors, and the nurserymen will have to take care of their laurels—not their evergreens—or they will be left behind in the race. For forty-eight trusses the first prize was most deservedly awarded to the Rev. R. N. G. Baker, of Heavitree, for examples, large in size and splendid in colour, of Madame Victor Verdier, Madame Charles Wood, Charles Lefebvre, Duke of Edinburgh, La France, Maurice Bernardin, Sénateur Vaisse, Mdlle. Marie Rady, Felix Genero, Duchesse de Caylus, Exposition de Brie, Antoine Ducher, Centifolia rosea, Louis Van Houtte, Alfred Colomb, Anna de Diesbach, and a magnificent Baronne de Rothschild. Mr. Ingle, gardener to Mrs. Round, Colchester, was second with a fine stand, in which Cloth of Gold, Maréchal Niel, Gloire de Dijon, Rubens, Jules Margottin, and Berthe Baron were particularly good; and Mr. Chard, Clarendon Park, Salisbury, was third; the Rev. G. Arkwright, Pencombe Rectory, Bromyard, being fourth; Safrano in his stand was very fine. In his stand of thirty-six, the Rev. R. N. G. Baker had fine trusses of Pitord, Louise Peyronny, John Hopper, Duc de Wellington, and of several of the kinds shown in his forty-eight. Mr. Chard was second, Mr. Excell, gardener to J. Hollingworth, Esq., Maidstone, third, and Mr. J. Davis fourth. In his first-prize twenty-four, the Rev. Mr. Baker had the best Felix Genero in the Show, and splendid examples of Prince Camille de Rohan, Duke of Edinburgh, La France, Marie Baumann, Maurice Bernardin, John Hopper, Victor Verdier, Dr. Andry, and Baronne de Rothschild. Second came Mr. T. Graveley, Cowfold, Sussex, with a stand in which were Paul Delamoilleray, Victor Verdier, and others. Of new Roses of 1868, Duke of Edinburgh, very splendid in colour, was shown both by Mr. Turner and Messrs. Paul & Son, fully justifying the high expectations formed of it on its first coming out. Mr. Keynes had Marquise de Castellane, also of a very fine colour; and Messrs. Paul & Son Marquise de Mortemart. The best stand of twenty-four Roses of 1868 and 1869 came from Messrs. Paul & Son, and the best in it were Duke of Edinburgh, Robert Marnock, a maroon seedling from it, which promises to be an acquisition, though more of the Madame Moreau character than we like; Mr. Gladstone, Nardy Frères, Dupuy-Jamin, Catherine Mermet, Belle Lyonnaise, and Comtesse d'Oxford. Mr. Keynes came in second; his best were Ferdinand de Lesseps, Dupuy-Jamin, Madame Liaband, white with a pink-tinged centre; Marquise de Castellane, Madame Jacquier, a Felix-Genero-like flower, and Adrien de Montebello, rose with a brighter centre. The third prize went to Mr. J. Durbin. Mr. Keynes was first for the best twelve blooms of any variety with La France, very large and fine; Messrs. Paul & Son being second with Centifolia rosea; and Mr. Bridge, Stisted, Braintree, third.

In the first collection of Yellow Roses, Mr. Keynes's magnificent examples of Maréchal Niel were first; Messrs. Paul & Son were second; and Mr. H. May, third. Céline Forestier and Triomphe de Rennes were well represented in several stands.

In vases or epergnes of Roses for dinner-table decoration, Miss Bayspoole, of Morden, was awarded the first prize for a stand in which the trumpet-shaped flower-holder at top was filled with Roses interspersed with Grasses, cornucopia-like branches similarly filled, with at the base of the stem a circular mirror surrounded with a broad edging of Ferns, Roses, and Begonia leaves. The last-named are objectionable as they soon wilt, and the Grasses were somewhat too freely introduced; Miss Hassard, Upper Norwood, was second; and Mr. Stoddart third, with a March stand with Lonicera aureo-reticulata twining-up the stand. Mrs. Dombrain was fourth with a very neatly-filled glass basket; and an extra prize was given to an elaborately got-up stand with a flat looking-glass base, bordered with Roses, Ferns and Grasses.

Hanging-baskets, vases, and Fern-cases furnished with plants, came from Messrs. Carter & Co., and from Messrs. Dick Radclyffe & Co., who took prizes for each. Messrs. Carter & Co. also sent a fine pair of Dichorisandra mosaica, exhibited at Kensington on the previous

Wednesday, double-flowered and Tricolor Pelargoniums. Messrs. Downie, Laird, & Laing sent a mixed group of fine-foliaged plants, many fine Phloxes, &c.; Messrs. Paul & Son, Roses in pots; Mr. Turner, Show Pelargoniums, Pinks, and Verbenas; Messrs. Burley and Martin several good Scarlet Pelargoniums. Mr. Turner and the Rev. G. Arkwright sent collections of cut blooms of Roses.

The Metropolitan Floral Society offered prizes for Pinks and Ranunculuses, Mr. Turner, Mr. Hooper, Widcombe Hill, Bath, and Mr. Pizzey, gardener to Sir E. Fulmer, Slough, were the prizetakers for twenty-four Pinks, while for twenty-four and twelve Ranunculuses the Rev. H. H. Dombrain was first, Mr. Hooper being second for the former, and Mr. O. Evans, Marston, Oxon, for the latter.

DARLINGTONIA CALIFORNICA.

Slight confusion has been caused by De Candolle applying the name of Darlingtonia to some members of the Acacias, which he separated from them and formed a new genus. This has been abolished, and the species so separated added to Desmanthus. However, it was resolved that Dr. Darlington, an American botanist, should not be robbed of the honour due to him, so Darlingtonia has now been bestowed on a new genus of the natural order Sarraceniaceæ, or Pitcher Plants. Only one species is known at present, and popularly known as the Californian Side-saddle or Pitcher Plant. It has been thus described by Mr. Black. It is "a perennial herb growing in marshy places. Its leaves all rise from the root, the adult ones being from 8 inches to a foot or more in length; the stalk or pitcher tubular, gradually tapering downwards and singularly twisted on the axis about half a turn, marked with strong veins and slender veinlets, and the summit vaulted and formed into a sac about the size of a hen's egg, on the under side of which is an oval orifice about half an inch in diameter opening into the cavity of the pitcher; the upper part of this tube is of a dull orange colour. The blade, which is borne on the end of the stalk or pitcher, is narrowed at the base and deeply divided into two spreading nearly lance-shaped lobes, which are curved downwards, and also often backwards, resembling the lop-ears of some varieties of rabbit. The pitcher inside the hood is furnished with short conical hairs which point downwards, and towards the base there are long slender hairs also pointing downwards; remains of insects are sometimes found at the bottom. Dr. Dorrey writes 'The orifice of the pitcher being placed directly under the vaulted summit, cannot receive either rain-water or dew, and yet Mr. Brackenridge thinks he found some of the leaves containing water; still I cannot think the water was secreted by the hairs in the tube.' The flowers are single and nodding at the apex of a smooth stalk, which is furnished with straw-coloured scales, and varies from 2 to 4 feet in length. When fully expanded the flower is about 2 inches in diameter; the calyx consists of five straw-coloured acute sepals; the petals, of a like number, and pale purple in colour, are narrowed and concave at the apex and broad below; the twelve to fifteen stamens are nearly hidden by the projecting summit of the ovary, which is top-shaped, slightly five-angled, and crowned by a short style with a five-lobed stigma. The fruit is a five-celled capsule about an inch in length, with numerous seeds. The forked blade of the leaf and the form of the stigma distinguish the genus from Sarracenia, which has an umbrella-shaped stigma."

Darlingtonia californica.

Mr. Robinson observed on this plant at the Linnean Society, that it grows on the Sierra Nevada, at an altitude of 5000 feet above the sea, in small sloping bogs along with Sphagnum and other true bog-plants. At a distance the pitchers have the appearance of Jargonelle Pears, holding their larger ends uppermost, at a distance of from 10 inches to 24 inches above the ground.

This resulted from the pitchers being quite turned over at the top so as to form a full rounded dome, and the uppermost half of the pitcher being of a decided ripe pear-yellow. They are all twisted spirally, especially in their upper portion. Each pitcher had at the bottom a layer of from 2 to 5 inches of the remains of insects closely packed into it; from those of minute beetles to large feathery moths. What it is that attracts the insects is by no means clear. Pass a sharp knife through a lot of brown pitchers withering round an old plant, and the stumps resemble a number of tubes, densely packed with the remains of insects. Within the pitcher the surface is smooth for a little way down; then isolated hairs appear; and soon the chamber becomes densely lined with needle-like hairs, all pointing down, so decidedly indeed, that they almost lie against the surface from which they spring. These hairs are very slender, transparent, and about a quarter of an inch long, but have a needle-like rigidity, and are perfectly colourless. The poor flies, (one is shown entering the sac in our drawing) moths, ladybirds, &c., seem to travel down these conveniently arranged stubbles, but none seem to turn back. The pitcher, which may be a couple of inches wider at the top, narrows very gradually, and at its base is about a line in diameter. Here, and for some little distance above this point, the vegetable needles, of course, all converge, and the unhappy fly goes on till he finds his head against the thick firm bottom of the cell, and his rear against myriads of bayonets; and here he dies. Very small creatures fill up the narrow base, and above them larger ones densely pack themselves to death in the hope of fighting their way out. When held with the top upwards, sometimes a reddish juice with an exceedingly offensive odour drops from them.—(*Treasury of Botany—Nature*)

WORK FOR THE WEEK.

KITCHEN GARDEN.

Let there be no delay in planting out a good breadth of White and Purple Cape *Broccoli*, also *Cauliflowers* and Grange's Early White Broccoli; the latter, if true, is invaluable late in autumn. Trench up ground and fill it with similar vegetables as the early crops go off; not one vacant spot or corner should now be left uncropped. Break down the leaves over the heads of the most forward *Cauliflowers*, and keep up a good supply of stimulants. See that *Cucumbers* and *Vegetable Marrows* do not want for liquid manure and water; peg down the vines as they advance, and attend to stopping. A full sowing of *Endive* may be made for the main crop, and if any were sown in May the plants had better be thinned, and the thinnings replanted. We do not recommend early sowing, because Lettuces are much superior for any purpose for which Endive can be required at this season, and therefore it is advisable never to sow until all danger of its running to seed is over. The Small Green Curled is the hardiest for winter use, but for the autumn crop the Large Green Curled is a splendid Endive, planted in very rich soil at 2 feet apart. This sort will not bear severe frost, nor does it keep in store so well as the Small Green Curled, and therefore for all late purposes the latter should only be sown. The large Batavian Endive is also a useful variety where Chicory is in request for salads. Thin and earth-up and stop advancing crops of *Dwarf Kidney Beans*, and sow the latest successional crop. Take the first opportunity, as soon as the *Herbs* of various kinds are sufficiently advanced, to cut a portion for drying; the best time is as soon as the blossoms are expanded, because they then contain most of the aromatic principle. We need not add that they must be perfectly dry, and dried quickly in the shade. Tie up *Lettuces* for blanching, and make successional sowings, and of *Radishes*, and other salads. Keep up the sowings of *Spinach*. Make the last sowing of *Scarlet Runners*, and give those advancing a little assistance in training up the stakes. Persevere in hoeing and forking up the surface of the soil in every department; it is the groundwork of success.

FRUIT GARDEN.

The season lately having been what is called a growing one, increased diligence must be used in keeping all young wood properly nailed to the walls to guard against the effects of high winds. Gooseberries and Currants trained against north walls should have the leaders nailed in, and all the side shoots spurred down to within a few joints of the base. Peaches, Nectarines, and, indeed, wall trees in general, will be occasionally benefited by strong syringings, whether infested with aphides or not, because, independent of washing all filth, which of itself is a good thing, it disturbs and routs out woodlice, earwigs, and other vermin, which are sure to congregate amongst the shreds and at the back of the shoots, and which, if left undisturbed, will tell a tale by-and-by. Let the Strawberries be well gathered as they become ripe, for if left on they retard the swelling and ripening of those remaining. Continue the thinning of Grapes, and keep the growth judiciously stopped.

FLOWER GARDEN.

The weather has of late been most unfavourable, but the rain has fallen so copiously as to put a stop, for some time at least, to the laborious operation of watering. Plants in masses that have been pegged down are growing rapidly, and the Verbenas are throwing out strong healthy roots from the stem, thus showing the advantage of pegging down. Depend upon it, the closer we can get all plants in masses to the surface of the ground, the more certain shall we be of success, for from their proximity to the soil a more robust and rapid growth is secured. Advantage should be taken of showery weather to fill up all vacancies in beds or borders, also to plant out German Asters, Ten-week Stocks, Marigolds, and other annuals, to fill up all the empty spaces in the flower borders. Attend to rolling and mowing the lawn, weeding, sweeping and rolling walks, and to hoeing, raking, and stirring the surface of the ground. Continue to peg down all plants that require it. Support and regulate the shoots of climbers. Stake and tie up all tall-growing plants. Prick-out biennials into nursery beds. Destroy earwigs and all kinds of destructive insects. Strive to keep up as complete an appearance of high keeping as the number of your hands and other means will permit. Reduce occasionally some of the blossoms in the bud state on some of the very free-flowering Perpetual Roses. Let gross shoots on fancy Roses be pinched when a few eyes long, after the manner of fruit trees. Patches of Musk as edgings should have the tops cut off, or it grows wild.

GREENHOUSE AND CONSERVATORY.

Most of the finer kinds of hardwooded plants will now be out of bloom, and, consequently, due attention must be paid to starting them for another season. Some, such as Boronias, Epacrises, &c., will require cutting-in rather closely; and, indeed, as loose straggling plants are at a discount now, use the knife liberally wherever and on whatever it is found necessary. Some of the plants will probably want shifting, and this should not be delayed on any account longer than the middle of the month. After the plants have been pruned-in, and the old flowers and the seed-pods removed, arrange them neatly under a north wall on ashes, allowing plenty of space for a free circulation of air on all sides, and also provide a temporary stage, so that an awning can be thrown over the plants during heavy falls of rain. After the plants begin to grow, those which have not been recently potted will be benefited by an occasional application of weak manure water prepared from guano or from sheeps' dung and soot. Keep a sharp look-out for insects of all kinds, also mildew, and give the plants, if the weather is dry, a sprinkling once or twice a-week from the garden engine. The early-blooming Pelargoniums must now, if the wood is thoroughly ripe, be cut in preparatory to the coming season. Do not spare the knife, and after they are all cut-in place the plants in a shady situation, so that they may break strongly and regularly. Due attention must also be paid to providing a stock of Scarlet Geraniums for winter blooming, by growing them throughout the summer in the full sun without allowing them to bloom, and by getting nice healthy plants, of medium growth, rather than over-luxuriant ones. Calceolarias which have done blooming should have their flower-stems removed forthwith, and the plants should be afterwards in a shady situation under the protection of a frame. Take care that they are perfectly free from insects, and to keep the thrips, which is a deadly enemy at bay. Fumigate the frame about once a-fortnight with tobacco. Many of the showy specimens of superior stove plants should be removed to these structures at this period, provided they are coming into blossom. The large Clerodendrons, Ixoras, Stephanotis, Pergularias, Gardenias, Plumbagos, Liliums, Jasminums, Erythrinas, &c., are of this class. These when highly cultivated begin at this season to press on their weaker neighbours, and their beauty will, moreover, be longer preserved if they are slightly retarded, a greater depth of colour also will be produced under a moderate temperature. Look well to the training of trellis climbers whether in pots or out, and frequently stop the points of growing young stock.

STOVE.

Many of the basket Orchids will soon be protruding their

roots through the moss or soil, and a little additional fibrous peat or moss should be added in due time. When dull weather prevails lay by the syringe for a day or two, and increase the amount of both atmospheric moisture and of air. Stove stock in general will gain some more room by the discharge of large specimens into the conservatory or greenhouse.

PITS AND FRAMES.

These will require abundance of air and careful watering daily. Some of the delicate stock will at times require shading through the middle of the day, especially where unplunged.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

ALMOST constant drizzling rain, with very heavy downpours, have left nothing to do in this department but to occupy every bit of spare ground with winter stuff. We shall not be able to plant out Broccoli until we can dig down a piece of Strawberries when the fruit has been gathered, but we shall prick-out and lift with balls. Owing to scarcity of room we have partly filled earth pits outside, from whence flowering plants have been taken, with the earlier winter vegetables, as the Ulm Savoy, the London Colewort, &c. Our ground is so full and so close-cropped that, like many more, we feel we sadly want more space for vegetables. We hardly ever think of Lettuces, Spinach, Radishes, &c., as any crop; they must come as best they can as intermediaries, and get out of the way before the shade is too dense. For instance, between rows of Raspberries 4 feet apart we have a row of Cabbages in the middle, and a fine row of Lettuces on each side of the Cabbages. The Lettuces will be pretty well gone before we want to gather the Raspberries. This is merely a sample. Spinach and Radishes between rows of Peas have been succeeded in the case of the early Peas by Cauliflowers, the Peas just giving them a nice shade at first. After clearing off Spinach between high rows of Peas, as Ne Plus Ultra, we have sown Radishes; but the Peas are threatening to be so strong and luxuriant that we fear Radishes even will do little good between them, and we must secure what is wanted daily and crisp and sweet by sowing in an open place. Like early Carrots, a great deal of gathering can be had from a small space, provided the thinning for use commences soon enough. By the 25th we shall sow some Dickson's Favourite Pea, still a fine Pea for cropping and general purposes, and then afterwards sow a few of the earlier kinds, as the last for the season. Unless for a particular purpose it is hardly worth while to have Peas for gathering in the beginning of winter under glass protection. They come too close on the open-air ones in a good autumn to be much thought of. They are something like new Potatoes before Christmas. In February they would be much more prized. The earliest Peas have done first-rate after the heavy rains. All ours on ridges between Celery beds were in our opinion benefited by a good drenching of sewage before the rains came fast. The finest show of bloom on early Peas we ever saw was at Luton Hoo. The kind was Ringleader. The plants were comparatively dwarf, but from bottom to top, and forming a broad-based pyramid, the rows were a perfect sheet of bloom. As that was in the cold weather before the rain, Mr. Cadger complained that they would not budge, the young Pea refusing to swell, but we have no doubt the warm rains altered all that. Laxton's Supreme was very fine last season; and as there is plenty of ground there we shall try and see what the new varieties will do, as most of them, we believe, have been sown.

One word more for the sake of those comparatively inexperienced, and who wish to have some nice green *Peas in the end of September* and the best part of October. Do not satisfy yourself with merely digging a piece of ground, and then drawing a shallow drill and throwing the seeds along the narrow bottom, where the Peas will be close if not pell-mell on each other. Dig the ground from one and a half to two spits deep, and if some rotten dung can be incorporated all the better; then, where the row is to be, take out a shallow trench a foot in width and some 6 inches in depth; on that trench place 2 or 3 inches of rotten manure, fork it over to the depth of from 4 to 6 inches, nicely incorporating soil and manure. Let the shallow trench dry a little and then pass along it and tread it regularly, and then if the soil is at all dry give the trench a soaking of water. Sow the seeds shortly afterwards, giving them a width of 6 or more inches, and so that the seeds individually will be at least 3 inches apart; beat the Peas slightly down with the back of a spade, and then cover all over with from half an inch to an inch of soil. We have found no plan better for general, and especially for late crops, and none more effectual for keeping the mildew at bay, be the season moist or dry. It will be seen that we consider three things of importance—first, the deep moving and pulverising of the soil, that the roots may be encouraged to extend themselves, and moisture be enabled to pass down freely as well as to rise freely in the shape of vapour from beneath. Second, the firm seed bed, to encourage robust firm growth at first. Third, the moistening of the ground before sowing—far better than a dozen shilly-shally, not root-reaching, but earth-cooling waterings afterwards. And we may add a fourth—scattering the seed thinly instead of thickly, so that each seed will have some room for roots and stem. But for the dread of the seeds being devoured, comparatively thin seeding always yields the best result at gathering time. The red-leading enables us to sow thinly with safety.

Cauliflower has never been better after the rains, even a buffish-coloured fine head is not despisable, but we prefer them white more like new-fallen snow. Need we say to beginners, To secure this whiteness tie the heart leaves together, so as to exclude the sun from the flower-head, or simply take a leaf and lay over it to keep the sun from it.

Potatoes notwithstanding the heavy rains are showing as yet no signs of distress or of disease. From a bank sloping to the south we have raised fine tubers of the Ashleaf, in size and quality, but still they are not the flour balls of the same sort that were obtained from an earth-pit covered with old sashes, and which place is now appropriated to Vegetable Marrows and ridge Cucumbers, which will have the old sash protection until the plants want more room outside. We are glad that our experienced coadjutor, Mr. Robson, and others, have taken up the question of earthing and not *earthing-up Potatoes*. Our experience and experiments lead to these conclusions. In ordinary soil, and in ordinary seasons, the earthing-up is a matter of no importance if the Potatoes are planted about 6 inches deep. In stiffish soils it will be advantageous to earth them up early if the season should prove extra dry or extra wet. In the first case the tubers and rootlets seem to be better preserved from the drought above, and to derive more benefit from the moist vapours that rise from beneath. In the second case, the extra moisture passes away more freely. In ordinary seasons, and in soil neither extra stiff nor extra light, we have found little appreciable difference in weight or measure, in the case of a crop left flat or ridged. Some years ago we found something like a fifteenth in favour of the flat. In a rainy season when the disease was not uncommon, we had the best crops on the ridge, and they were almost entirely free from the disease, whilst those on the flat were much affected. In such a dry season as last summer, we found there was fully one-tenth in quantity in favour of the ridge, and the quality was better, and the size more uniform. As to earthing-up, however, allow us to invite all keen amateurs and anxious beginners to re-read carefully Mr. Robson's paper. It is quite a mistake in earthing-up, be it a Potato or a Cabbage or Cauliflower, to draw the earth to a point like the ridge of a house. Make, as it were, two ridges, with a valley between them. Our good Editors are in favour of non-earthing-up, but we know full well they are too liberal-hearted to think that all the wisdom is with them. We fully endorse, however, what they say, that mere opinion unproved by results is of no value. Will friends, therefore, give the results of carefully conducted experiments? We had long practised the non-earthing system. Were we sure of the ancient summers with their sunshine and showers, we should be disposed to dispense with earthing-up. As it seems more uncertain whether we shall have a very wet or a very dry season, we feel disposed to earth-up. There is an advantage, too, in the very early crops. We frequently pull earth not only to but over the earliest shoots, to prevent them being nipped by April and May frosts.

FRUIT GARDEN.

The rain has been the very thing for the Strawberries. Our ripe ones out of doors are few and far between, but our supply from pots will still be good a little longer. We are glad that the flowering and fruiting is quite up to the old mark in so many places. Just round this neighbourhood, at least, the bloom has been defective in quantity. We took the glass sashes off the piece that we covered, so that it should have the full benefit of the rains. In such dull, sunless weather the glass sashes would not have advanced them a bit. That we have proved over and over again. The sun gladdening us again on this the 24th, we had the sashes put on, and early in

the afternoon we will enclose all the sun heat we can, so that we shall have a free gathering when our pots are fully exhausted.

The rains have done much to clean the fruit trees. We find the wood of the Peach trees out of doors is more injured than we expected. This happens so frequently that really it seems next to waste of labour and expense to go on with them on open walls. We could bring to our recollection some scores of places where the Peach trees covered the walls most beautifully, but one winter greatly injured them, and the next pretty well settled them, and then the renewing process went on, and then in some eight or ten years the same fatal result ensued. We know there are places where the Peach on the open wall rarely suffers, but for many years produces large handsome fruit. But, on the other hand, and that has been our own experience too, we have seen and had as fine Peach walls as were ever looked at, with not 6 inches of brick left uncovered, and we have seen the trees on these walls a few years afterwards perfect wrecks, not worth their room, and entirely owing to the climate, and chiefly the frosts of winter injuring the wood. Hence in most places much north of London it would often be true economy to front a Peach wall with glass, so as to make an orchard house of it. Done with cheap glass it would soon pay itself in the saving and bother of all protecting material. The carrying off the extra wet, and the securing of a still atmosphere within in the times of severe frost, are the chief elements of safety.

When trees look very queer out of doors, it is pleasant to look on fine healthy wood, and fruit set like ropes of Onions, with merely a glass protection. Went over the *orchard house* trees and thinned out and stopped shoots, and thinned still more the fruit now stoning. These houses had been stuffed and crammed with bedding and other plants, as we had been passing through a period of change, and until these are accomplished we have had to make the most of what glass protection we could command. Got these houses pretty free now though they look still very thick. We have gathered some fine Elton Cherries on the open wall, but for six weeks we have had a fine supply from pots in the orchard house, that were quite a picture, though the plants have been in the same pots for many years, and to save waterings have been plunged nearly to their rims, and have been frequently mulched, as that, too, saves watering. The Cherries have been uniformly good, and they bear heavily in pots. We have also had wonderful crops of Plums, but this season they are nothing remarkable, and chiefly our own fault, for if we had cut away the half of the crop last year, it still would have been an ample and heavy one. Oh! that we could thin enough and in time. In our Peach house we have had a fair crop, but we did not require to thin. The blooms in the Peach house had scarcely two hours' sun on them altogether, and the setting in consequence was imperfect. In the orchard house, on the contrary, the bloom rejoiced in extra sunshine, and pretty well every bloom on trees on the back wall, and in pots in front set.

The *thinning* alluded to above is the third, as it is as well not to go to an extreme before the stoning is perfected. It is unwise, on the other hand, to leave all the thinning until then. Some of our keen amateur friends have done so, and they have had in consequence no trouble in thinning, the most of the crop dropped at the stoning process. We have rarely had a fruit drop, and that from thinning early and by degrees. In some Peaches that do not set very freely we have found it important to thin out the weakest and side-placed blossoms, and then the others set well. To prevent Peaches and Nectarines dropping at the stoning and second swelling process, it is well to thin considerably before stoning, but still to leave enough to thin more after the stoning is effected. As instanced above, the thinning is not always required. We do not think we took above two or three score of sound fruit out of the early Peach house, and yet on the whole the trees carried pretty well as much as they ought. We would rather thin freely, however, than have a deficient crop. We have sometimes thought that in early Peach houses the trees knew our weak point for quantity so well, that they just set and swelled little more than was necessary.

But we will return to the orchard houses. The mere thinning of the fruit is not everything, so as to secure free swelling and prevent dropping; much of that will depend also on extra dryness and extra wetness. We have known the most of the fruit in a house drop its fruit at and after the stoning process, not because too many fruit had been left, but because with a damp surface the ground at the roots was very dry. We have known similar results take place when after such dryness a great drenching has at once been given. In the one case the roots and fruit were starved; in the other case the extra nourishment was more than the tree could at once appropriate, and the glut, as it were, threw the fruit off.

The chief remedies against dropping fruit and dropping buds are, first, by ample drainage to prevent stagnant water, and then as soon as the buds show signs of moving in the spring never to allow the roots to be dry. It is often necessary to have the soil pretty dry in the autumn and the first winter months to secure due and full ripening of the wood; but this attained, many fruit trees in pots and borders drop their fruit buds in spring for want of the necessary moisture at the roots. The cultivator should never be satisfied with surface-appearances, but use his fingers and a pointed stick to see the state of the soil beneath. If the soil prove dry it is best to moisten by degrees, so as to take a week or so in the process. When the roots in pots are dry to the bottom, it is a good plan to make half a dozen holes with a small wire, and then water moderately at a time until the moisture percolates through the whole. If the plants are growing in the soil it is well to water thoroughly a portion at a time. These precautions will greatly help against dropping buds and falling fruit. Clearing out flowering pot plants from the orchard house enabled us, after moving the surface soil just the least with the points of a fork, to throw a little superphosphate and soot over the ground for a width of 3 feet, and then give that a good watering with weak sewage. In about a week we shall give a good watering to another 3 feet. This plan we consider safer, at a critical period, than soaking the whole border and roots at once. When once the fruit is taking its second swelling kindly there is then less danger from a good watering all over, and if the drainage will prevent stagnant water there is no great danger of over-watering until the fruit is approaching maturity.

Peach House.—Not wishing to have a glut, and to keep the fruit for use as long as possible, we gave up all firing as soon as the weather got warmer, and left air on night and day. The fruit has a deeper colour and a richer flavour when thus ripened. One of the prettiest sights we ever saw was at Ashridge last year. The trees were trained beneath the slope of a lean-to roof. Every fruit was fully exposed and all the lights removed. Not a fruit seemed to be touched, but we noticed no birds about. In similar circumstances here we should not have expected to find one unpicked fruit after the first twenty-four hours. If we had left our front ventilators of the orchard house open we would soon have had no trouble in gathering Cherries. Birds very rarely venture through our open top ventilators. Rats will cunningly climb the wall and so enter, and go out the same way after they have done the mischief.

Vines in the orchard house have set pretty fairly, but not so well in such dull weather as if they had been privileged with more sun, so as to give a higher temperature. For unheated orchard houses the earlier kinds should chiefly be used. Hoping to have the place heated, we had planted some Vines of Lady Downes', but it was all we could do to get them to ripen well last year. They like a good heat to set freely. These Vines having but little earth room had a good rich watering, and Vines in vineries planted against back walls, &c., were treated with the same. The Vines have had no syringing, and in the late dull weather very little water has been sprinkled on paths or stages. When bright weather comes more water will be sprinkled on paths to promote a moister atmosphere.

ORNAMENTAL DEPARTMENT.

The work was very much a continuance of that of last week. We are an unsatisfied set of grumblers. Last season we complained of the want of wet, and now we are apt to think the grass grows sadly too fast for us. No weather could be better for all fresh-planted trees and shrubs. We cannot but sympathise with those who have great breadths of grass cut, and which will be much injured for hay. All planting in field and garden with the dibber could be done pretty well where the soil did not stick to the feet. Where planting with the trowel must be resorted to, we prefer waiting until the soil is drier. Plants never thrive so well when planted in cloggy soil. We hope, however, soon to get all our bedding plants, including Coleus, &c., out. The cloggy soil has alone prevented us. We will then go a-head with potting, &c.—R. F.

TRADE CATALOGUE RECEIVED.

Thomas S. Ware, Hale Farm Nurseries, Tottenham, London, N.—*Catalogue of Perennials, including Herbaceous, Bulbous, and Tuberous Plants.*

TO CORRESPONDENTS.

*** We request that no one will write privately to any of the correspondents of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By doing so they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely to The Editors of the Journal of Horticulture, &c.*, 171, *Fleet Street, London, E.C.*

N.B.—Many questions must remain unanswered until next week.

Naming Flowers (*C. H.*).—We cannot name florists' varieties. A dozen specimens at once is just twice too many.

Old Pine Strawberry (*B. I. L.*).—Any nurseryman who advertises in our columns could obtain it for you.

Packing Strawberry Plants (*A. P.*).—The following directions are given by an American nurseryman:—"Take up good, sound, young, and well-established runners; remove all decayed leaves, tie the plants in bunches of twenty-five or fifty, with their crowns evenly arranged; wrap in moist moss; pack tight in an open box, with the crowns upwards, and nail slats across the top to keep them in, and yet allow free access of air."

Ants on Rose Trees (*Goddess*).—You had better spare the ants, they do no harm and only feed on the honeydew deposited by the aphides. It is a popular delusion that they destroy the aphides, they are wise enough not to kill the goose that lays the golden egg, and merely feed on the honeydew, which is a secretion from the aphis. If, however, "Goddess" wishes to drive the ants away, she can do so by tying a piece of tar-band round the stem of each standard Rose tree, dipping the tar-band previously in carbolic acid. A fresh application of carbolic acid to the tar-band will effectually prevent the ants from passing it, if at any time the smell of the carbolic acid has evaporated.

Picking-off Dead Flowers of Roses (*H. A*).—You are quite right in the plan you have usually followed, as there is no use in leaving the dead unsightly heads of Roses on the trees after they have done blooming, unless you wish to save seeds of choice varieties. It is better to cut back to within four or five eyes of the base of the shoot, on which the Rose has bloomed. We doubt whether Monplaiser is hardy enough to stand the winter out of doors unprotected. Much depends on soil and climate. If in a sheltered position or against a wall it would most probably be hardy enough.

Iresine Lindeni Propagation (*L. E.*).—It strikes freely from cuttings. The cuttings may be of the points of the shoots, and if they have two joints with the growing points it is sufficient. Trim off the leaves from the lowest joint, and insert up to the next pair of leaves around the sides of pots about an inch apart, in a compost of equal parts loam, sandy peat, leaf soil, and silver sand. Place in a gentle hotbed of 76°, shading from bright sun, keeping close, and just moist. In about a fortnight the cuttings will be well rooted, and should be hardened-off, and then potted singly in 3-inch pots, placing in a cold frame, and keeping rather close and shaded for a few days until established. They should be removed to a greenhouse before cold weather sets in, and may be wintered amongst other bedding plants, but are better kept in a cool stove or warm greenhouse. The soil should be kept dry in winter, giving no water, only to keep the foliage fresh. The plants may have 4½-inch pots in September, and either have the points of the shoots taken out, or be stopped to two joints. The plants will give cuttings in February, and those struck in a hotbed make nice plants by the bedding-out time. The beginning of August is a good time to put in the cuttings. They will also strike freely at that time in a cold close frame.

Gymnogramma Infested with Scale (*M. S. B.*).—The fronds you sent us are covered with a black fungus occasioned by the secretions of the brown scale (coccus), which you will find on the leafstalk (stipes) of the fronds. The only remedy is to cut off the worst infested parts and remove all the insects that are not brown and hard with the point of a knife. The best plan for those that are brown and hard is to take them in the hand and rub them between the finger and thumb so as to destroy the young, to which the brown scales serve as covering. You may then brush over all the stipes and where the brown scale appears with a solution of gum arabic, 1 oz. to half a pint of water; the gum to be thoroughly dissolved. In two or three days wash off with warm water. The picking-off with a knife is a tedious proceeding, but is safe. We advise it in preference to any wholesale destruction by composition, which on Ferns require very great care.

Budding Fruit Trees (*J. H. D.*).—All the kinds you name may be budded at the beginning of July, in forward seasons, and this year about the middle of that month; but much depends on the weather and the season. As a rule the Cherry is the first fit to bud, then you may follow with the Apple and Pear, then the Plum, and last the Peach and Nectarine. If you have Apricots they will stand second. You will find instructions for budding, and much information relating to gardening craft, in the "Science and Practice of Gardening." It may be had post free from our office for 3*s.* 3½*d.* All budding should be done by the close of July, in forward seasons up to the second week in August. There is no work treating of what you name. You ought to have the "Cottage Gardener's Dictionary," price from our office, free by post, 7*s.* 2*d.*

Floor for Shed (*Passion*).—We have our shed floors formed of cement. They are very hard, even, dry, and durable. The floor is made level, and, if any loose soil is put in, rammed firm. Then put on about 6 inches in thickness of brickbats or other rubble, and make the surface as small as possible, breaking the surface with a hammer. When this is complete it should have left about an inch deep for the cement. Then take of Portland cement about equal parts to that of gravel sifted through a half-inch riddle. The gravel should be free from sand or dirt, and if not it should be washed. We use sea gravel. Mix with water to the consistency of thin mortar. Run on, and make level, smoothing over with a trowel, making an even surface. The cost is about 2*s.* per yard.

Sowing for Flowers next Spring (*Idem*).—Alyssum saxatile compactum, Arabis albida, Aubrietia græca, Canterbury Bells vars., Myosotis sylvatica and var. alba, Brompton Stock, Viola cornuta, V. lutea, Wallflower—double German, single dark, and yellow.

Japanese Honeysuckle Flowering.—We are obliged to the writers of fifteen letters telling of this; it is evidently so usual an occurrence that no one need advise us of the fact.

Various (*A Constant Subscriber*).—1, Geraniums to flower in June may be stopped at the beginning of May, or about seven weeks before flowering. 2, For flowering in winter, Salvia cuttings ought now to be put in, and the plants forwarded so as to have them strong and bushy before autumn. It is now quite late enough. Ours are well-established in small pots from cuttings struck at the end of May. 3, Æchmea fulgens is a stove plant, and very fine for winter flowering.

Night Soil Utilising (*S. Wales*).—The earth is the best disinfectant. Could you not apply it to the soil and dig it in at once? The best plan, however, is to mix it thoroughly with dry soil, and in this way there is no need of a disinfectant. The soil should be placed on it in a shed, and covered with the dry soil there is no small of consequence. The sewage may be poured on the ground, either diluted with water between growing crops of vegetables, or on ground before cropping.

Lily of the Valley in Summer (*A Constant Subscriber*).—Give a top dressing of well-rotted manure about half an inch thick, and copious waterings in dry weather.

Mildew on Plants in Conservatory (*Idem*).—It is usually most abundant in a moist, close, badly-ventilated structure. The only remedy is to dust the infested parts with flowers of sulphur. Camellias, Heaths, and Azaleas now removed from a conservatory to the open air ought not to be pruned. It will do away with the flowering next year.

Cauliflowers Buttoning (*C. W.*).—Your plants ran, or what is known to gardeners as "buttoning." The most frequent cause is planting old plants, those that have been a long time sown and are old before planting, the check consequent on that causing them to run. We advise you to raise your own plants, sowing the seed thinly in an open situation, and when about 3 inches high prick the plants out about 3 inches apart, and when 6 inches high plant out 2 feet apart. Water well in dry weather, and apply liquid manure between the rows. Instead of being the size of a half-crown piece, the heads should be the size of a quart basin.

Grape Diseased (*J. D.*).—It is very severely shanked. Apply more nourishment and warmth to the roots.

Sundials (——).—We cannot tell where you can purchase one. Some correspondent will, perhaps, send us the information. Put on it, if you obtain one, the Temple monitory motto—"Go about your business."

Mushrooms in Beds (*J. E., Antwerp*).—There is little risk of unwholesome Mushrooms growing in prepared beds with proper Mushroom spawn used. The heating of the materials does much to extirpate all unwholesome Fungi. A few Fungi may sometimes appear before the true Mushroom appears, but they are so different that there is no difficulty in distinguishing them. There are no better instructions for Mushroom-growing than have appeared in our pages.

Plums on Leafless Shoots (*An Amateur*).—It used to be supposed that stone fruit would not swell nor ripen unless there were a terminal shoot, or, at least, some leaves before the fruit, but we have gathered fine fruit when these were wanting. Still it is desirable to have such leaves to keep up a healthy circulation of sap. In your case we would thin the fruit more than usual, encourage shoots further back, and as soon as the fruit was ripe cut out all these leafless shoots. The cause is the want of a wood bud at the point, or on the shoots. All the buds had been fruit buds. This is sometimes apt to happen when the pinching-back system in summer is rigidly carried out. You cannot put your Black Hamburghs too soon into 12 or 18-inch pots, and if they fill the pots well with roots, and the wood is well matured, they will show fruit well next season. Everything will depend—first, on free growth; and secondly, on maturing and hardening that growth.

Heating Vinery and Greenhouse (*W. R.*).—We should prefer the heating as at No. 1, the boiler being placed at the junction of the two houses. You can then heat the two houses, each independently of the other. In plan No. 2, you must take the pipes through the vinery to heat the greenhouse. You may, however, so manage as to take a flow and return merely through the vinery, the other pipes being shut off when not wanted. If you do not raise the temperature of the vinery above 45° in winter, it will not matter heating that before the greenhouse, if there is enough of piping in the latter to make a lowish temperature in the water suitable. A bed in the centre of the vinery would make a good propagating-pit, especially if you cover the bed with lights or sashes. You can thus have a higher temperature, say 60° to 70° in the air of the bed, and not more than from 40° to 45° in the general atmosphere of the house. 2, There is little practical difference in wood or iron for glass roofs, the last if galvanised will cost less afterwards for painting. There have been at least three editions of Loudon's "Encyclopædia of Gardening," the last the best.

Return Flue (*An Old Subscriber*).—There is no objection to the return flue so as to have the chimney at the same end as the furnace. There is also no objection to the raising the same flue to the ground level. If there is a difference, the furnace being left all the same it will draw all the better, but when you raise the flue you lose the benefit of the sunk cistern or pit. We would prefer raising the new part of the flue and letting the other remain as it is. You may grow Vines in such a house 4 feet apart, if you do not want plants in summer, and if the average temperature in winter for your plants is not above 45°. All herbaceous plants are suitable for an herbaceous border, but you must choose as to whether you want them tall, dwarf, or of medium height. A Phlox 6 feet in height and one less than 6 inches would not do well together. These matters should be stated.

Red Insect on Orchard-house Peaches (*C. C.*).—We cannot conceive what you have on the Peaches unless it be Aphis Persicæ, but that is not small, and it is more black and brown than red. You say it is not red spider. We would use soap water and tobacco water, and in the morning after syringe strongly with clear water.

Insects (*Old Rowley*).—The insects which have attacked the roots of your Lettuces are the larvæ of one of the smaller species of daddy long-legs (Tipula sp.). The roots should be carefully searched as soon as the plant flags, and the larvæ destroyed by hand. We know no liquid application which will destroy them without injuring the plants. Children should be employed to catch the flies when they appear in the perfect state.—I. O. W.

Names of Plants (*M. P. Gr.*).—You have sent seventeen specimens, and we cannot attend to so many.

POULTRY, BEE, AND PIGEON CHRONICLE.

HANTS AND BERKS AGRICULTURAL SOCIETY'S POULTRY SHOW.

We like the idea of change. We like locomotion. We like to turn over fresh books, or fresh pages. We think great benefit results from it. It is good for all—the society, managers, judges, and every official. It is good for exhibitors. There are few localities that have not some speciality, and no man is a judge of the merit of his own till he has been in contact with others. When we saw the large Show of last week, we felt glad we had been allowed to assist at its growth and development. It has sprung from the small plain chrysalis at Basingstoke, living only a few hours in the day, to the large Show we saw on Wednesday and Thursday last at Portsmouth. The few cattle and horses tethered in the open, have disappeared to make space for the long, covered, and protected sheds. The scarce pens of sheep have stretched their entries till they extend over acres. The horses may be taken in troops. Steam engines seem to snort defiance at each other; the whirr of the wheels is heard in all directions. The Bath and West of England treads on the heels of our respected Royal Agricultural, and the Royal Counties (Hants and Berks), treads on the heels of the Bath and West of England. True, we have to do only with poultry, but we cannot help noticing the progress that is made in all things. All sorts of things follow these meetings. Every requisite for the farm, for the cottage ornée, for the dairy, for the kitchen, for the garden, carriages that are miracles for lightness and elegance, churns that make the operation almost a luxury instead of a labour. Such cunningly mixed food for all sorts of quadrupeds, and sold at such low rates that the marvel is, that every man does not keep at least a cow and two horses. It puts us in mind of a continental fair that lasts a fortnight, and attracts every description of trade. It did so, because in one of the most frequented rows there was a shop that had nought to do with agriculture, more like fairings or keepsakes, or shall we say love-tokens, paper cases, travelling and work-bags, marvels of leather-work in every way, and tempting things in metal, we had almost called it jewellery. These stalls are attractive to couples of a certain age. That particular certain age people rejoice in and are proud of. The advent of such wares and merchants proves the good that is done by these meetings. Thousands are brought, hundreds learn, and all are amused. We must, however, now in good sober truth deal with our subject, and treat of poultry. It is time, and if we continue our remarks and reminiscences, we shall come in contact with flower shows, military bands, George II.'s state carriage, an Arabian horse that made us covet, &c.

The *Dorkings* headed the list and showed good birds, but we are compelled to repeat that which we often write, Spurs outside the legs are disqualification. The prize birds were heavy and in good condition. The commended pens were also meritorious. There is a tendency to send the first prize for *Cochins* to Birmingham, and the present was no exception, Miss Julia Milward's birds made it a difficult case. Many hens at this time of year lose from largely-developed and, consequently, falling and crooked combs, when later in the year after moulting and before laying, they would be successful. *Game* were good, and the competition was close between Black Reds and Duckwings and Piles, if it were necessary to say which was best. We believe these birds are being bred too leggy. *Polands* are well represented in Hampshire, and the prizes in their class were among the best-contested in the Show. If there had been more prizes, they might have been awarded deservedly. It was hard to give Mr. Edwards only a high commendation, but it was unavoidable. The Golden and Silver were excellent. *Spanish* are not popular in this county, and this year they formed no exception, only a second prize was awarded. *Hamburghs* were "to the fore" in quality and numbers, but as we had occasion to observe during the winter and early-spring shows, the Golden are going a-head of the Silver. In both classes, Pencilled and Spangled, it was so. The Silver-spangled might almost take exception to our report, but we must say that although they were very meritorious (*vide* the prize list), yet the Golden were still better. The Light *Brahmas* were an excellent exhibition. Many of them were beautiful birds. The winners perform an exploit, and may be proud of it. The Dark Brahmas (alas! that it should be so), were inferior to the Light, and vulture hocks hindered success where it might otherwise have been easy. The next class is peculiar to Hampshire. We cannot find one out of that county when it is composed of Andalusians. There was a good one here. We can speak well of the Game *Bantams*, which were truly smart. In the Any other variety class it will give a good idea of the competition in Silver Sebrights if we append the names of the successful. First, the Rev. G. F. Hodson; second, Mrs. Pettat, Ashe Rectory. The *French* fowls bear out the report of the English judges. The Crêve-Cœurs are the best, the Houdans second, and then the La Flèche. The cock in the prize Crêve-Cœur pen of the Rev. N. J. Ridley was one of the best we ever saw. The Varieties are very much the same everywhere. Malays, Black Hamburghs, and Silkies took the prizes. Strange to say, the Aylesbury *Ducks* were better than the Rouens. The latter were not up to the mark. The *Turkeys* were as good as we ever saw. We would especially name those belonging to the Rev. N. J. Ridley, combining feather and weight in an eminent degree.

There was a very pleasing show of *Pigeons*. Forming part of it was a pair of the Bleeding Heart—a rare and curious bird. There were also excellent *Rabbits*, showing all the varieties in colour, shape, or size. The weather was unfavourable, but on the only fine day upwards of 20,000 people visited the Show. No notice of this pleasant meeting would be complete if it did not bear testimony to the hearty co-operation and assistance of the Mayor and Corporation of Portsmouth. A town incurs a debt to those who represent it so worthily. The same may be said of Mr. Downes and the Society itself. He has worked earnestly, and is reaping his reward; the Society owes its success to him.

Dorkings.—1, J. Smith, Shillinglee Park, Petworth. 2, Miss J. Milward, Newton St. Loe. *hc*, Miss Paisley, Fareham; J. Smith.

Cochins.—1, H. Lloyd, jun., Handsworth. 2, Miss J. Milward.

Game.—*Black-breasted and other Reds.*—1, H. Gibson, Brockenhurst. 2, W. H. Stagg, Netheravon. *Any other Variety.*—1, S. Matthews, Stowmarket. 2, G. Potts, Chartham.

Polands.—1, J. Hinton, Warminster. 2, Mrs. Pettat, Ashe Rectory. *hc*, T. P. Edwards, Lyndhurst (2); Mrs. Pettat; H. Pickles, jun., Earby, Skipton.

Spanish.—1, Withheld. 2, Rev. J. De L. Simmonds, Chilcomb Rectory, Winchester.

Hamburghs.—*Gold-pencilled.*—1, F. Pittis, jun., Newport. 2, H. Pickles, jun. *Silver-pencilled.*—1 and 2, H. Pickles, jun. c, C. F. Wilson, Totton, Hants. *Gold-spangled.*—1, R. Wilkinson, Guildford. 2, H. Pickles, jun. *Silver-spangled.*—1 and *hc*, H. Pickles, jun. 2, Miss E. Brown, Chardleigh Green, Chard. c, Mrs. Pettat (2).

Brahma Pootra.—*Light.*—1, H. M. Maynard, Holmewood, Ryde. 2, Rev. N. J. Ridley, Newbury. *hc*, J. Pares, Postford, Guildford (3); J. Morton, Guildford. *Dark.*—1, H. D. Dent, Gloucester. 2, J. K. Fowler, Aylesbury.

Andalusian.—1, O. Nicholson, Landport. 2 and *hc*, W. Wildey, Cosham. c, W. Westcott, Landport.

Bantams.—*Game.*—1, C. J. Spary, Ventnor. 2, J. Smith. *hc*, J. Pares; A. Cruttenden, Haywards Heath. c, E. S. C. Gibson, Ryde. *Any other Variety.*—1, G. F. Hodson, North Petherton, Bridgewater. 2, Mrs. Pettat. *hc*, H. M. Maynard.

French Fowls (Crêve-Cœur, La Flèche, or Houdans).—1 and 3, Rev. N. J. Ridley, Newbury. 2, Hills & Co., Brighton. *hc*, J. K. Fowler.

Any other Variety.—1, J. Hinton. 2, C. Maggs, Melksham. 3, Miss E. J. N. Hawker, Tunbridge Wells.

Ducks.—*Rouen.*—1, G. Chase, Titchfield, Fareham. 2, W. B. Stubbs, Alresford. *Aylesbury.*—1, A. P. Marvin, Fareham. 2, J. K. Fowler. *Any other Variety.*—1, F. Pittis, jun., Newport.

Geese.—1, J. K. Fowler.

Turkeys.—1, Rev. N. J. Ridley. 2, T. Bailey. *hc*, Miss J. Milward; Mrs. J. Mayhew, Great Baddow, Chelmsford.

Pigeons.—*Carriers.*—1, H. M. Maynard, Ryde. 2, H. Yardley, Birmingham. *Tumblers.*—1, J. Ford, Loudon. 2, H. Yardley. *hc*, W. H. Cooper, Farnborough. *Fantails.*—1, H. Yardley. 2, H. M. Maynard. *hc*, Miss J. Milward. *Trumpeters.*—1, A. P. Maurice, Basingstoke. 2, H. Yardley. *Magpies.*—1, A. P. Maurice. 2, H. Yardley. *Any other Variety.*—1, H. Boyer, Bourne. 2, H. M. Maynard. *hc*, H. Yardley; W. H. Cooper; W. Fielder, Southsea.

Rabbits.—*Longest Ears.*—1, H. Cawood, Thorne. 2, G. Hill, Winchester. *Foreign.*—1 and *hc*, J. F. Marsden, Whitley, Reading. 2, H. Cawood. *Any other Variety.*—1, H. Hollands, Southsea. 2, H. Simmons, Portsea. *hc*, H. Simmons; T. Snook, Landport. c, J. F. Marsden (2).

Extra Stock.—c, W. B. Boxall, Strathfieldsaye (Peacock); W. W. Curtis, jun., Portsmouth (Peacock).

Judge.—Mr. John Baily, 113, Mount Street, Grosvenor Square, London.

SPALDING POULTRY SHOW.

The poultry showed rather a decrease in the number of entries from that of our previous exhibitions, but the 192 pens brought together represented specimens of a high character of all our cultivated birds. It is to be regretted that so liberal a schedule fails to bring a larger competition. The fact is indisputable that the best time of the year for the showing of flowers and fowls is not one and the same. Those, however, who visited this department on Thursday last may rest assured that, although an autumn's competition would have brought a much larger collection, they have seen the pick of some of the most noted yards in the kingdom.

Dorkings and *Game* were good. The cup Brown Reds of Mr. Julian's were shown in the condition usual with that gentleman. *Cochins* and *Brahmas* were more numerous, and we think it must have puzzled the Judge whether to award the cup to the well-developed Buffs of Mr. Lacy or the grand pen of Whites of Mr. Sichel, which were shown in the very pink of condition, their brilliant combs and wattles forming a beautiful contrast with their perfectly clear and snowy white plumage. The Buffs were, however, the fortunate recipients of the highest honour. In *Brahmas* the names of Pares, Crook, Rodbard, and Lacy are a sufficient guarantee for the quality of the birds. *Spanish* and *Hamburghs* were few, but good. The Silver-spangles of Mr. Beldon will be difficult to beat. The cock in this pen is eight years old, and wins another cup in addition to his many victories. *Bantams* were first-rate, notably the winning Game, the Pekin and the pretty little Whites of Mr. Beldon's. It may be subject for remark that this purely agricultural district could afford only one couple of dressed fowls in their class.

The *Pigeons* were the grandest collection ever seen in Spalding. Carriers formed a show in themselves. Those shown by Messrs. Fulton, Horner, and Massey will hold their own in any contest. A very grand young Dun cock the property of the latter was left out in the cold. Though he failed to attract the Judges' eye, he did not escape the scrutiny of some of the knowing ones, as £20 was refused for him immediately on the opening of the Show. Mr. Fulton's Black cock was the best of its colour, and well merited its position as first-prize. Pouters were very fine, and the Almond and other Short-faced Tumblers were

shown in perfection. Mr. Ford's cup pen contained a pair of gems Barbs were shown in all colours, a pair of Reds of Mr. Massey's were the winners of the other cup. The Dragoons were designated by the Judge in the catalogue to be "a very good class." Fantails, Owls, Jacobins, and Trumpeters all contained unusually good specimens. In Turbits we thought very highly of the winning Black, a colour not frequently seen in perfection in this variety.

The *Cage Birds* were a very interesting collection, the King Parrot of Mr. Harrison's was a magnificent specimen.

Rabbits were very numerous, and some excellent specimens were shown in all the varieties. The Lop-eared of Mr. Easten's repeat their usual performance of taking the cup.

Dorkings.—*Coloured.*—1, J. Stott, Healey. 2, J. White, Warlaby. 3, R. W. Richardson, Beverley. *hc*, E. W. Southwood, Fakenham. *Any other Variety.*—1, W. J. Woodhouse, Lynn (White).

Game.—*Brown-breasted Reds.*—1 and Cup, H. M. Julian, Hull. 2, H. E. Martin, Sculthorpe. 3, S. Matthew, Stowmarket. *Black-breasted Reds.*—1, W. K. L. Clare, Twycross. 2, S. Matthew. 3,—Fairbanks. *Any other Variety.*—1, S. Matthew (Duckwing).

Cochina.—*Cinnamon and Buff.*—1 and Cup, H. Lacy, Hebden Bridge. 2, H. Lloyd, jun., Birmingham. 3, Mrs. A. Woodcock, Leicester. *hc*, J. N. Beasley, Northampton; W. F. Checkley, Northampton. *c*, W. Sanday, Nottingham. *Any other Variety.*—1, J. Sichel, Timperley (White). 2, H. Lacy. 3, S. A. Wyllie, East Mousley (White). *hc*, E. Leech, Rochdale; T. Sharpe, Pontefract (Partridge).

Brahmas.—*Dark.*—1 and 3, H. Lacy. 2, J. H. Picklee, Southport. *hc*, J. S. Dew; J. Sichel; H. Lacy. *Light.*—1, Miss A. Williamson, Leicester. 2, J. R. Rodbard, Wrington. 3, F. Crook, Forest Hill. *hc*, Mrs. A. Worthington, Burton-on-Trent; M. Leno, Markyate Street; F. Crook.

Spanish.—1, T. C. & E. Newbitt, Epworth. 2, H. Beldon, Bingley. 3, C. Howard, Peckham. *hc*, J. Powell, Bradford.

Hamburghs.—*Gold-pencilled.*—1, H. Picklea, jun. 2, H. Beldon. 3, J. Rollinson, Lindley. *Silver-pencilled.*—1, H. Beldon. 2, H. Picklee, jun. *Gold-spangled.*—1, H. Beldon. 2, J. Rollinson. 3, E. Phillimore, Cheltenham. *hc*, J. Rollinson; L. Wren, Lowestoft. *c*, E. Y. Gardon, Newcastle. *Silver-spangled.*—1 and Cup, H. Beldon. 2, H. Pickles, jun.

Game Bantams.—*Brown-breasted Reds.*—1 and 2, T. C. & E. Newbitt. 3, G. Morling, Lynn. *Black-breasted Reds.*—1 and Cup, W. Grice, Bootle. 2, G. Todd, Sunderland. 3, T. C. & E. Newbitt. *hc*, J. R. Robinson; T. C. & E. Newbitt; G. Maplea, jun. *c*, W. Adams, Ipswich. *Any other Variety.*—1 and 2, T. C. & E. Newbitt.

Bantams.—*Black or White.*—1, H. Beldon (White). 2, S. & R. Aahton (Black). *hc*, J. Watts, Birmingham. *Any other Variety.*—1, M. Leno. 2, H. Beldon. *hc*, Mrs. A. Woodcock.

French.—1, H. Beldon. 2, J. Sichel (Crêve-Cœurs). 3, Mrs. J. Cross, Brigg (Houdans). *hc*, Mrs. J. Cross (Crêve-Cœurs); R. B. Wood, Uttoxeter; S. A. Willie (La Flèche); W. Dring, Faversham (Houdans).

Any other Variety.—1, H. Beldon (Polands). 2, W. K. Patrick, West Winch (Polands). 3, W. Massey, Spalding (White Leghorn). *hc*, H. Pickles, jun. (Silver Polands); W. K. Patrick (Polands); R. Wilkinson, Guildford (White Minorca); E. Fane, Grantham; Rev. A. G. Brooke, Shrawardine (Malay).

Selling Class.—1, W. Nottage, Northampton (Black Spanish). 2, H. N. Harvey, Spalding. 3, W. Massey (Houdan). *hc*, W. K. L. Clare (Black Red Game); E. Hancock, Spalding (Brahmas); A. Cole, Long Sutton (Hamburghs); J. Powel (White-faced Black Spanish); T. Hardy (Dark Brahmas); H. Bates (Hamburghs). *c*, E. S. Smith (Dark Brahmas).

Ducks.—*Rouen.*—1 and Cup, E. Leech. 2, J. White. *Aylesbury.*—1, W. Stonehouse, Whitby. 2, J. Williams, Wath-upon-Dearne. *Any other Variety.*—1, M. Leno (Mandarin). 2, R. W. Richardson. 3, W. Binns (Bahama). *hc*, R. W. Richardson; S. & R. Aahton, Mottram (Carolina).

Geese.—1, T. Hardy, Spalding.

PIGEONS.

Carriers.—*Black.*—*Cock.*—1 and 2, R. Fulton, Deptford. *vhc*, E. Horner, Leeds. *Hen.*—1 and 2, R. Fulton. *vhc*, W. Massey, Spalding. *hc*, F. W. Metcalfe, Cambridge; W. Massey; E. Horner.

Carriers.—*Any other Colour.*—*Cock.*—1, H. Yardley, Birmingham. 2, W. Massey. *Hen.*—1, R. Fulton. 2, E. Horner. *hc*, H. Yardley. *Single Bird.*—1 and 2, W. Massey. *hc*, H. Yardley; E. Horner (2). *c*, J. C. Ord.

Pouters.—*Cock.*—1 and *hc*, R. Fulton. 2, J. Hawley, Bradford. *Hen.*—1 and 2, R. Fulton. *hc*, R. Fulton; E. Horner.

Tumblers.—*Almond.*—1 and Cup, J. Ford, Monkwell Street, London. 2, E. Horner. *hc*, R. Fulton (2). *Any other Variety.*—1, R. Fulton. 2, J. Fielding, jun., Rochdale. *hc*, W. B. Ford (Black Mottled); E. Horner (Mottled). *c*, W. J. Woodhouse.

Barbs.—1 and Cup, W. Massey. 2, E. Horner. *hc*, W. Massey; E. Horner. *c*, H. Yardley. *Single Bird.*—1, A. A. Vander Meersch, Tooting. 2, R. W. Richardson. *hc*, W. Massey.

Jacobins.—1, E. Horner. 2, G. Roper, Croydon. *hc*, R. Fulton; W. Massey; R. G. Sanders.

Fantails.—1, H. Yardley. 2, E. Horner.

Trumpeters.—1 and 2, E. Horner.

Turbits.—1, G. Roper. 2, J. Fielding, jun. *hc*, E. Horner.

Owls.—1, J. Fielding, jun. 2, R. Fulton. *hc*, J. Ford; E. Horner.

Dragoons.—1, W. Massey. 2, A. Ashton.

Any other Variety.—1, S. A. Wyllie (Runts). 2, J. Watts. *hc*, W. B. Tegetmeier. *c*, E. Horner.

Selling Class.—1, G. Roper. 2, J. C. Ord (White Dragoons). *hc*, W. Nottage. *c*, T. J. Caparn, Newark-on-Trent; W. G. Tegetmeier; W. Nottage; W. Massey (Dragoons); J. Watts.

CAGE BIRDS.

Canary.—1, L. Belk, Dewsbury. 2, G. Dykes, Pinchbeck. *hc*, A. Lewis, Hull; L. Belk; J. N. Harrison, Belper.

Linnet, Goldfinch, or other English Finch.—1, J. N. Harrison. 2, J. W. Harrison, Spalding. *hc*, W. Kitchin, Spalding; L. Belk. *c*, W. Massey.

Lark.—1, J. H. Eaves, Boston. 2, D. Bates, Spalding. *hc*, E. Muschamp.

Thrush.—1, H. Jacklin, Spalding. 2, B. Seymour, Spalding. *hc*, J. E. Greenall.

Blackbird.—1, J. H. Eaves. 2, R. D. Borne, Boston.

Parrot, Paraquette, Lobby, or other Foreign Bird.—1, J. W. Harrison. 2, J. E. Storr, Spalding. *hc*, Mrs. Rotticey; W. Vickers; J. Cappe.

RABBITS.

Heaviest.—1, W. Arkwright, Chesterfield. 2, T. Mumby, Long Sutton. *hc*, J. H. Louth, Spalding; A. H. Easten, Hull.

Lop-eared.—1 and Cup, A. H. Easten. 2, J. Hume, Laythorpe.

Fancy, except Lop-eared.—1, S. G. Hudson, Hull (Silver-Grey). 2, A. H. Easten (Himalayan). *hc*, A. H. Easten (Angora White); S. G. Hudson, Hull; S. Greenwood, Hebden Bridge (Silver-Grey); W. Morley, Northampton (Dutch); R. H. Glen, Wakefield (Silver-Grey); H. B. Massey (Leporide).

Selling Class.—1, H. Pickworth, Spalding. 2, E. Vaughan, Birmingham (Angora). *hc*, E. Vaughan; S. Greenwood (Silver-Grey); J. Pickworth (Silver-Grey); W. Morley (Dutch); J. G. Quick, St. John's Wood (2).

Judges. — Mr. Richard Teebay, Fulwood, near Preston; Mr. F. Esquilant, Brixton.

Warrington Poultry Show.—For fowls there are fifteen silver cups to be awarded at this Exhibition, in addition to the usual prizes of 40*s.*, 20*s.*, and 10*s.* in each class; and for Pigeons ten silver cups, in addition to the prizes of 20*s.*, 10*s.*, and 5*s.*

EXETER POULTRY AND PIGEON SHOW.

Although for the display of a large show of poultry few, if any, grounds can be better than those of Northern Hay, at Exeter, being terraced, and wooded with an abundance of most extraordinary well-grown elms, in case of really bad weather nothing can be more exposed to a driving rain; and such, most unfortunately, was the case on Thursday last, the 22nd inst. It would be almost impossible to recall to mind a more unfavourable day as to weather. Of course, placed entirely in the open air, no collection under such adverse circumstances could be seen to advantage, and the very slight public attendance that ensued must detract from the admission money very considerably indeed. Still, in such energetic hands as the present Committee, we do not fear but every effort to provide against so unfavourable a contingency another season will be carefully considered.

Certainly one of the great features of this Show was the *Pigeons*, class after class being shown of most excellent quality, and the entries for numbers were unquestionably good. It will be seen by referring to the prize-list that Mr. Bulpin, of Bridgwater, took many prizes with very superior pens, and capitally shown. This gentleman's first-prize pens in Fantails, Pouters, Barbs, Trumpeters, and Owls fully maintaining the high repute of their owner's selection.

In fowls, *Hamburghs* were in most instances quite equal to those shown in even Yorkshire. Strange to say, there was not a single entry in the *Turkey* class; but in the *Bantam* class many a pen of home pets were present that the soaking rain prevented anyone seeing to advantage. Some of the grandest pens of *Minorca* fowls, both White and Black, were exhibited. They are great favourites in these districts, and, we are told, most unvarying layers. Some of the hens were very characteristic of this showy fowl when in perfect health and plumage. Some really good *French* fowls were also shown.

Spanish.—1, F. Brewer, Loatwithiel. 2, S. R. Harris, Cusgarne, St. Day.

Dorkings.—*Coloured.*—1 and 2, E. Burton, Truro. *White.*—1, T. H. Nicholls, Tangier, Lostwithiel. 2, Lady Vivian, Glynn, Bodmin.

Cochin-China.—*Coloured.*—1, J. Beard, St. Blazey, Par Station. 2, S. R. Harris. *White.*—1, J. R. Whitehead, Gnaton, Torquay. 2, T. M. Hawke, St. Day. *hc*, F. Brewer.

Game.—*Black-breasted and other Reds.*—1, S. R. Higham, Morchard Bishop. 2, J. T. Browne, St. Austell. *hc*, E. C. Pope, Falmouth. *Any Colour.*—1, E. C. Pope. 2, Rev. G. S. Cruwys, Tiverton.

Minorcas.—1, S. R. Harris. 2, H. Leworthy, Newport, Barnstaple. *hc*, Miss S. H. Northcote, Upton Pyne; E. Burton.

Brahma Pootras.—*Dark.*—1, E. Burton. 2, W. M. Snow, jun., Exeter. *Light.*—1, C. W. Croft, Tor Hill, Kingskerswell. 2, Withheld.

French (La Fleche, Houdans, or Crêve-Cœurs).—1, T. E. Hawken (Crêve-Cœur). 2, G. Slade, Crewkerne (Houdans). *hc*, H. Wyndham, Brockhampton (Crêve-Cœur).

Hamburghs.—*Golden-pencilled.*—1, W. Speakman, Nantwich. 2, S. R. Harris. *Golden-spangled.*—1, S. R. Harris. 2, E. Phillimore, Cheltenham. *Silver-pencilled.*—1, S. R. Harris. 2, G. Scott, jun. Martinstown. *Silver-spangled.*—1, S. R. Harris. 2, Miss E. Brown, Chard.

Polands.—*Black with White Crests.*—1, J. Beard. 2, No competition. *Gold or Silver.*—1, J. Beard. 2, W. H. Copplestone, Loatwithiel.

Guinea Fowls.—1, Miss S. H. Northcote. 2, C. Bulpin, Bridgwater.

Bantams.—*Gold-laced.*—1, Rev. G. F. Hodson, North Petherton. 2, Rev. G. S. Cruwys. *Silver-laced.*—1, Rev. G. S. Cruwys. 2, C. Bulpin. *Game.*—1, J. Mayo, Gloucester. 2, C. Parsons, Cornhill. *hc*, W. Dale, Weston-super-Mare. *Any other Variety.*—1, J. Mayo (Blacks). 2, Rev. G. S. Cruwys. *hc*, Rev. G. F. Hodson.

SINGLE COCKS.

Spanish.—1, Withheld. 2, F. Seccombe, Totnes.

Dorkings.—*Coloured.*—1 and 2, E. Burton. *White.*—1, F. Seccombe. 2, R. N. Thornton, Knowle, Sidmouth.

Cochin-China.—1, F. Brewer. 2, J. N. Whitehead, Gnaton, Torquay.

Game.—1, Withheld. 2, J. H. Hart, St. Austell.

Brahma Pootra.—1, J. H. Nicholls. 2, E. Burton.

Geese.—1, W. S. Trevithick, Hayle.

Ducks.—*Aylesbury.*—1, S. R. Harris. 2, T. E. Hawken. *Rouen.*—1, S. R. Higham, Morchard Bishop. 2, E. Burton. *Any other Variety.*—1, G. S. Sainsbury, Devizes (Black East Indian). 2, Rev. G. S. Cruwys (White Pomvian).

PIGEONS.

Carriers.—Prize, E. J. Dew, Weston-super-Mare. *hc*, F. Hayman, Exeter.

Tumblers.—Prize, E. J. Dew. *hc*, F. Beck, Exeter; C. Bulpin.

Fantails.—Prize, C. Bulpin. *hc*, G. H. Gregory, Taunton.

Jacobins.—Prize, J. & C. Bullen, Newport, Barnstaple.

Pouters.—Prize, C. Bulpin. *hc*, G. Packham, Whipton.

Nuns.—Prize, G. H. Gregory. *hc*, E. J. Dew; C. Bulpin.

Barbs.—Prize, J. & C. Bullen. *hc*, C. Bulpin.

Trumpeters.—Prize, C. Bulpin.

Archangels.—Prize, W. S. Loder, Bath.

Owls.—Prize, C. Bulpin. *hc*, J. & C. Bullen.

Turbits.—Prize, E. J. Dew. *hc*, G. H. Gregory; J. & C. Bullen.

Dragoons.—Prize, F. Graham, Birkenhead. *hc*, G. Packham; C. Bulpin.

Any other Variety.—Prize, W. S. Loder (Toya). *hc*, Rev. R. Worth, Clyst Hydon (Runts); C. Bulpin (Magpies); W. S. Loder (Frillbacks and Toye, 3).

Mr. Hewitt, of Sparkbrook, Birmingham, and Dr. Scott, of Exeter, officiated as Arbitrators.

BELGIUM PIGEON RACE.

On Saturday last was to be witnessed at the Crystal Palace a very curious and interesting sight; this was about six hundred true-bred Antwerp Pigeons. They had been sent direct from Belginm in large hampers securely fastened and then sealed, arriving at the Palace on Friday night, to be let loose at noon on the following day, and race back again for various prizes. Everyone has heard of the great pains taken by the Belgians in training their Pigeons for homing purposes, and many of these birds had been previously thrown in different parts of the south of England, and even from London, reaching their homes safely. The birds were exhibited in sixteen wire pens, each pen con-

taining about forty birds, and placed on the upper terrace for inspection. The numerous and fashionable company was much pleased and interested at the novel exhibition. The birds appeared to have suffered but little from their voyage; their plumage was clean and bright, and they seemed full of life and spirits, anxious to commence their homeward journey. Amongst the whole number we only saw two birds a little queer. All the different varieties of the Antwerp were represented, but we thought the Blues were the pick of the lot. We noticed some capital broad, nicely-rounded skulled birds, broad in the chest, full prominent eye, but little wattle, plenty of life and dash; in fact, quite a different kind of bird to what we are in the habit of seeing exhibited in England as Antwerps. All had been stamped with a private mark to insure its having started in the morning from the Palace, and they were well supplied with food and water. The fronts, tops, and backs of the pens were moveable, so that on the signal being given, the man appointed to each pen pulled these towards him, and there was nothing but the two sides left standing, and every bird could be liberated at the same moment.

Shortly before twelve the sky, which had been very cloudy and heavy all the morning, became brighter and clearer, the sun bursting forth, and the birds seemed to be making good use of their eyes in noting the position of the various hills and places within view. At ten minutes to twelve a large bell was rung to clear away the public from off that part of the terrace facing the pens. On the words "Are you ready?" being given by the starter, each man prepared to remove the fronts and tops of the pens, and on the fall of a red flag the cages fell to pieces, and away went the whole lot to a capital start, not one left behind. And a very pretty sight it was to see them soaring away in a south-easterly direction for home, not so much as taking a round or a glance at the transparent Palace, now glittering and sparkling in the bright sun. One could not help thinking it was a far pleasanter and a more humane sight than seeing princes and noblemen, with their ladies admiring them, slaughtering other poor, frightened, harmless Pigeons. At the start one bird immediately singled himself out and darted at once to the front in the direction of his long journey, the others following, and when all had reached a great height they made a slight curve, then rose to a greater altitude into a white cloud, where they could be seen by the aid of a powerful field-glass gradually breaking into smaller groups. The whole thing was over and the birds out of sight within two minutes of the start, except a solitary one or two. This was entirely different to what we had expected to see, when we remembered our own boyish attempt to get birds to fly; the amount of whistling, clapping of hands, and stone-throwing that was necessary before the bird would leave the roof or chimney-pot of a house. We fully expected them to have taken a round or two before finally starting, but nothing of the kind; away they all went immediately, as though every bird was fully aware of what it was doing, and determined if possible to win the race.

PRODUCTION OF FERTILE WORKERS—QUEEN PIPING.

A few days ago James Bower, Esq., of Knowle Lodge, asked me to look over a stock of bees purchased by him this spring, and which he had since driven from their straw hives, and placed with four of their own brood combs (worker) in a wooden bar-and-frame hive. Afterwards, as I understood, he opened the hive and found it without a queen, but with one or more queen cells tenanted; these he cut away, and gave the bees a Ligurian queen, which they, I think, must have killed, though she had been put under a wire cage according to the approved plan.

I found the hive contained very few working bees, and nearly as many small drones with drone brood in all stages and eggs, of course, in the old worker combs, no new comb having been made. But no queen was there, and to make quite sure of her majesty's absence, after looking very carefully over the combs three times, I lifted them out and placed them on the ground, two other persons scrutinising them both on taking them out and returning them, and also in the meantime looking amongst the bees left in the hive.

Do you think the bees, after their queen-cells were cut away and the Ligurian queen destroyed, tried to rear a queen from their too-mature brood, and so only succeeded in producing a fertile worker? Or in what way do you account for the drone brood and eggs in the hive when minus a queen?

I had four natural swarms from my one pure Ligurian stock, respectively—on the 17th, 24th, 26th, and 29th of last month. After a hive has thrown a first swarm, and the young queens are heard "piping," are they at liberty, or do they only continue the noise while confined in their cells?—J. Brierley, *Knowle.*

[There is little doubt that the hive has one or more fertile workers, but we should not like to pronounce a decided opinion as to the exact causes which led to their being produced. When "piping" is heard after the issue of the first swarm, i may proceed from the eldest princess at liberty, or from those still confined in their cells. Some people profess to be able to distinguish these by the varying notes. A day or two ago on examining a small artificial swarm to which a royal cell had been given, we found the queen at liberty, and on returning the comb to the hive she commenced piping very loudly. There was no other royal cell in the hive.]

QUEENS LEAVING THEIR HIVES.

A curious thing happened in my apiary the other day which may be worth recording. I had made an artificial swarm out of an Italian hive by driving, putting the swarm, as I always do, in the old stock's place. The stock itself, full of brood but empty of bees, was the next day put in place of a strong hybrid Italian hive, which I removed some 40 yards off. To my great astonishment on the third day (May 24th), a fine swarm issued from the Italian stock, which should have been queenless. No doubt the queen must have taken an airing and returned to her old stance. The hive itself which she quitted, subsequently (on the 7th of June), threw off a swarm, and the Italian stock did the same again on the 8th. This instance will go to prove what has been doubted by some, whether queens ever leave their hive when once they have become mothers. This queen must have been out on the wing more than once this spring, to have found her way so easily back again. She had never led off a swarm, having been artificially reared only the summer before.—B. & W.

HINGES TO BAR-AND-FRAME HIVES.

You are mistaken in thinking that the "bar-and-frame hive" which I gave to the Apiarian Society was hinged. These "triangular bar-frames" were so arranged on the sides of the enclosing "outer box," as to have an iron rod run through the whole of the eight frames. Upon this rod the frames were adjusted and worked sideways, when space to lift a comb for examination was required. The rod only formed the pivot which, so long as each frame was raised in succession on it, kept all the other frames steady; but this rod was always drawn out for the removal of the combs for separate experiments, or the extraction of honey. This was one of the attempts to cheapen the "bar-frame hive" for the bee-masters. My first frames were made to fit into grooves, taking as a guide the adjusted spaces of 1⅛-inch bars, and half-inch spaces which had been introduced by Mr. R. Golding as the improved fixed bars or rods of the Grecian hive; but no notches or hinges are admissible in the moveable "bar-and-frame hives," as the bees will not always keep to the calculated spaces for the combs. The power of moving the frames and combs laterally must be secured, or the hive is useless for examination. The triangular hive, therefore, never was hinged!—W. A. Munn.

BEE-KEEPING FOR COTTAGERS.

I could not help writing just a line in reply to your correspondent "W. J., *Shepherdswell,*" at page 431, who says, "I have always looked upon the practice (the use of brimstone torches), with considerable qualms of conscience; in fact, with a similar feeling to that experienced when seeing an animal slaughtered for food." Mr. Pettigrew takes a similar view, but at present I cannot see the force of the argument, for we do not kill bees to eat them, but to possess ourselves of their productions, and I maintain with the late Thomas Nutt, that it is quite as absurd to kill bees for their honey as it is to cut down a beautiful young tree in order to gather its fruit. And, again, Wildman says, "If we were to kill the hen for the egg, the sheep for its fleece, or the cow for her milk, everyone would instantly see our impropriety, and yet this is practised every year by our impolitic slaughter of the bees." I am heartily glad that the Rev. William Charles Cotton has come to the rescue, and I am anxiously looking for his promised communication on this subject, and I think he will bear me ont, that until we eat the bees after killing them, the "animal slaughtered for food" is not a parallel case, and I still think that the sooner we discontinue the killing the goose for the golden egg the better for cottagers everywhere, including—Shepherdswell.

Eccleshill Show.—The Committee are most anxious to make it an important one both for poultry and Pigeons, and if it receive support we can predict for it a future second to that

of none of the Yorkshire summer shows. There are three prizes in each class for poultry, with a cup each for the Game, the other large fowls, and the Bantam division. The prizes in the Pigeon classes are £1 and 10s., with two silver cups; and the much-desired separation of cocks and hens in the Carrier and Pouter classes is a feature, as is also a separate class for working Antwerps.

FASHION IN FOOD.—Many a man will naturally and surely say, "I am careful; I have not yet wasted, and therefore cannot save bread or meat." Still he may find out the way of contributing to the result. At the present time our whole people are eating wheaten bread, and therefore the great burden of food falls on wheat. If wheat is scarce, it becomes dear, because no substitutes are consumed. Here comes a case:—Maize is an article of food, used by others, which we do not use; yet our brethren in New England are fond of it, and they have the choice of wheat. It is from the want of habit and practice of using maize that the population do not resort to it; but if maize were brought sometimes into the variety of a well-to-do house, servants would learn how to deal with it, and they would use it in other houses and in their own when they marry.—(*Food Journal.*)

OUR LETTER BOX.

MR. JACKSON writes to us as follows:—"Mr. Hall, of Chelmsford, who complains in your last week's Journal of having sent me stamps for half a dozen Spanish eggs, and that I have 'neither sent the eggs nor replied to his letter,' had the eggs sent from here on the 30th of May; and my letter advising him of their being forwarded has been returned through the post office marked '*No address.*' Some people have an idea that however an ambiguous address they may attach to their communications, that the post-office authorities and railway companies are sure to find them, Mr. Hall among the number, as the only information of his whereabouts that he gave me was '*E. Hall, Chelmsford.*' I advise him in future to name his residence as well as the town he belongs to. I have no doubt he will find his eggs at the railway station.—W. JACKSON, *Blakedown, Kidderminster.*"

ONE-EYED COCK (*H. F. D. T.*).—The cock is certainly not disqualified by the accidental loss of an eye. It is a disadvantage; and if there were difficulty in deciding between two birds, the bird that had lost an eye would "kick the beam."

DETECTING THE GANDER (*Goose*).—The sex can be accurately told only by very close examination and handling; it is then easy, and reveals itself on being subject to pressure.

LOCUST BEAN MEAL (*Regular Subscriber*).—We do not know the meal, but we are sure that any addition is not necessary to ground oats. We believe they contain all that is requisite for the well-being of poultry. Barley, and still more pea or bean meal, have a tendency to harden both flesh and plumage. We not only do not recommend them under ordinary circumstances, but we believe many complaints and much disappointment arise from the unnatural, and, above all, the stimulating food with which fowls are fed.

STIFF FEATHERS (*R. A. W.*).—The stiff feathers in the vulture hock are well quilled, firm, and quite straight. They do not curve like the wing feathers. They project from the lower part of the thigh just above the knee 1½ inch, sometimes 2 inches, inclining downwards and outwards.

SEA SAND AND FOWLS' LEGS (*Idem*).—We cannot answer your second question. We have never kept fowls on the seashore. The salt water may have effect in the same manner that in some places the effect of the water is to change the colour of Ducks' bills.

WEIGHT OF COCKEREL (*Idem*).—You should have told us the breed of the cockerel, it would have enabled us to give a more correct opinion. Let it be as it may, it is a great weight—almost too heavy. It will be necessary to feed very well, otherwise his legs will give way. Give him ground oats sluked with milk; let him have access to plenty of bricklayers' rubbish, cooked meat chopped fine, and at times bread and milk. It will be for you to say whether he is worth this outlay and trouble. If he be of pure breed, and free from fault of shape or feather, his size makes him valuable. If he fail in any of these particulars we advise you to eat him. He will never be better.

ROMFORD SHOW.—Mr. Easten, of Hull, informs us that he was awarded the first prize for Lop-eared Rabbits, and not Mr. Harvey. Mr. H. Lingwood was awarded the first prize for Dark Brahmas; Mr. H. Partlett the first for Rouen Ducks; and Mr. J. Ford for Tumblers.

STROUD POULTRY SHOW.—Mr. E. J. Drew was the winner of the second prize for Almond Tumblers.

BELFAST SHOW (*M.*).—Thanks for the prize list, but we always conclude that if a committee do not think a show worth advertising, that it is not worth reporting.

CLEANSING POULTRY-HOUSE FLOOR (*The Vale*).—We conclude that your floor is of bricks or other hard substance. Cover it 3 inches deep with sand, and merely rake off the droppings in the morning. A layer of earth alternating with a layer of the droppings is a good way of accumulating a manure for your garden.

BARNS NOT BREEDING, &c. (*R. D.*).—It has been a common occurrence with fancy birds this season, for which the severe cold of the winter and spring must be blamed. Our own have been equally unfortunate. Tumblers of the larger and commoner sort breed very freely, also Dragoons.

COMMENCING PIGEON-KEEPING (*G. H. B. C.*).—Flying Tumblers are good birds to begin with, being perfectly hardy, good breeders, and anybody can manage them, as they give no trouble. Baldheads would suit you, or see answer above. Certainly so very far north as you live, the Pigeon-loft should not on any account face due north.

SALT FOR FOWLS (*T. E. W.*).—Salt is not necessary, but a piece can do no harm.

ARE THE QUEEN'S EGGS ALL OF ONE SEX.—In answer to Mr. Pettigrew's query, "B. & W." would feel satisfied with such an experiment as that detailed by Mr. Pettigrew, if on repetition it were demonstrated as a fact. But nothing can be proved beyond doubt by an isolated experiment, because queens which lay drone eggs (as I believe), or eggs which turn out drones in worker cells, may also lay worker eggs in drone cells. Why not? "B. & W." once felt sanguine in the same way as Mr. Pettigrew now does, but nothing came of the drone—royal cells. Therefore, he would remain sceptical even if one queen were to issue from the "seven cells which the bees have sealed up." Sceptical he would still remain, though less so, if more than one queen were hatched. The experiment must be repeated and proved again and again ere the matter could be beyond doubt. Very sorry "B. & W." is to miss the lucid and judicious pen of Mr. Woodbury, in common with every other reader of THE JOURNAL OF HORTICULTURE, who is interested in bees. May he soon recover his wonted health.

POT-POURRI (*Bristol*).—Gather the petals of the most fragrant kinds of Roses, with which other flowers may be mixed with pleasure in smaller proportion; spread them out to dry in the sun, or in a warm room; sprinkle a little salt on them, and put them in a jar, in which they are to be kept covered up till wanted for use. Take of these rose leaves 4 ozs.; dried lavender flowers, 8 ozs.; vanilla, cloves, storax, and benzoin, all bruised, of each 1 drachm; ambergris, 20 grains; otter of roses, 20 drops. Mix.

METEOROLOGICAL OBSERVATIONS,

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude 111 feet.

DATE. 1871. June.	9 A.M. Barometer at 32° and Sea Level.	9 A.M. Hygrometer. Dry.	9 A.M. Hygrometer. Wet.	9 A.M. Direction of Wind.	9 A.M. Temp. of Soil at 1 ft.	IN THE DAY. Shade Temperature. Max.	IN THE DAY. Shade Temperature. Min.	IN THE DAY. Radiation Temperature. In sun.	IN THE DAY. Radiation Temperature. On grass	Rain.
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
We. 21	29.832	59.5	56.5	N.	58.3	69.8	50.8	115.0	50.8	0.040
Th. 22	29.941	53.5	51.4	N.E.	58.3	60.0	51.0	79.1	52.7	0.640
Fri. 23	29.844	59.9	57.1	N.	57.2	65.2	51.1	120.2	56.4	—
Sat. 24	30.069	55.4	51.9	N.	57.3	65.8	48.1	111.0	49.8	—
Sun. 25	30.159	56.0	50.5	N.	56.0	62.5	41.8	116.8	42.5	—
Mo. 26	30.277	55.9	51.3	N.E.	55.4	64.6	41.0	121.5	40.4	—
Tu. 27	30.088	60.3	55.5	S.W.	55.6	70.1	40.2	119.1	42.8	0.030
Means	30.030	57.2	53.5		56.9	65.5	46.2	111.8	47.4	0.710

REMARKS.

21st.—Rather dull in morning, sunshine at noon, very heavy rain and thunder from 4 to 4.15 P.M., fair weather afterwards.

22nd.—Moderately fine till 5 P.M., then very wet all the evening.

23rd.—Dull morning, clearing-up towards noon, and continuing so till 5 P.M, when there was a very slight shower of very fine rain.

24th.—Fair all day with occasional sunshine, but very cold.

25th.—Fine day and beautiful night, but still cold.

26th.—Very fine, but still very cold for the time of the year.

27th.—Rather dull in morning but splendid day, and rather warmer than any day during the past week.

With a return of northerly winds, this week has been cooler than the last, and drier, except on Thursday, when there was heavy rain. Owing to cloudy nights diminishing radiation, and the warmth of the earth (57° at 1 foot), we have the singular fact that the weekly mean of the minimum thermometer on the grass is greater than that of the air 4 feet above it.—G. J. SYMONS.

COVENT GARDEN MARKET.—JUNE 28.

BUSINESS is rather better again this week, but the supplies of out-door produce have not much improved, first-rate descriptions of both English and foreign fruit and vegetables being comparatively scarce. Cherries and Currants have suffered much from the late heavy rains, and from the general accounts we have received do not promise well as to bulk. Potatoes of both kinds, Kidneys and Rounds, are plentiful, from 4s. to 12s. per cwt.

FRUIT.

	s.	d.		s.	d.		s.	d.		s.	d.
Apples	½ sieve	1	6 to	4	0	Mulberries	lb.	0	0 to	0	0
Apricots	doz.	2	0	3	0	Nectarines	doz.	10	0	30	0
Cherries	lb.	1	0	2	0	Oranges	℔ 100	6	0	10	0
Chestnuts	bushel	0	0	0	0	Peaches	doz.	12	0	24	0
Currants	½ sieve	5	0	0	0	Pears, kitchen	doz.	0	0	0	0
Black	do.	0	0	0	0	dessert	dos.	0	0	0	0
Figs	doz.	4	0	8	0	Pine Apples	lb.	5	0	8	0
Filberts	lb.	0	0	2	0	Plums	½ sieve	0	0	0	0
Cobs	lb.	2	0	2	6	Quinces	doz.	0	0	0	0
Gooseberries	quart	0	6	0	8	Raspberries	lb.	0	6	1	0
Grapes, Hothouse	lb.	3	0	8	0	Strawberries	lb.	0	6	3	0
Lemons	℔ 100	6	0	10	0	Walnuts	bushel	10	0	16	0
Melons	each	3	6	6	0	ditto	℔ 100	1	0	2	0

VEGETABLES.

	s.	d.		s.	d.		s.	d.		s.	d.
Artichokes	doz.	4	0 to	8	0	Leeks	bunch	0	4 to	0	6
Asparagus	℔ 100	4	0	8	0	Lettuce	doz.	0	8	1	0
Beans, Kidney	℔ 100	1	6	2	6	Mushrooms	pottle	1	0	2	6
Broad	bushel	0	0	0	0	Mustard & Cress	punnet	0	2	0	0
Beet, Red	doz.	2	0	8	0	Onions	bushel	5	0	8	0
Broccoli	bundle	0	0	0	0	pickling	quart	0	0	0	0
Brussels Sprouts	½ sieve	0	0	0	0	Parsley	sieve	0	0	0	0
Cabbage	doz.	1	0	2	0	Parsnips	doz.	0	2	1	0
Capsicums	℔ 100	0	0	0	0	Peas	quart	0	6	1	0
Carrots	bunch	0	6	1	0	Potatoes	bushel	3	0	6	0
Cauliflower	doz.	4	0	8	0	Kidney	do.	3	0	8	0
Celery	bundle	1	6	2	0	Radishes	doz. bunches	0	3	1	0
Coleworts	doz. bunches	3	0	6	0	Rhubarb	bundle	0	4	0	6
Cucumbers	each	0	6	1	0	Savoys	doz.	0	0	0	0
pickling	doz.	0	0	0	0	Sea-kale	basket	0	0	0	0
Endive	doz.	2	0	0	0	Shallots	lb.	0	6	0	9
Fennel	bunch	0	3	0	0	Spinach	bushel	2	8	0	0
Garlic	lb.	0	8	0	0	Tomatoes	doz.	2	0	3	0
Herbs	bunch	0	3	0	0	Turnips	bunch	0	2	1	0
Horseradish	bundle	3	0	6	0	Vegetable Marrows	doz.	0	0	0	0